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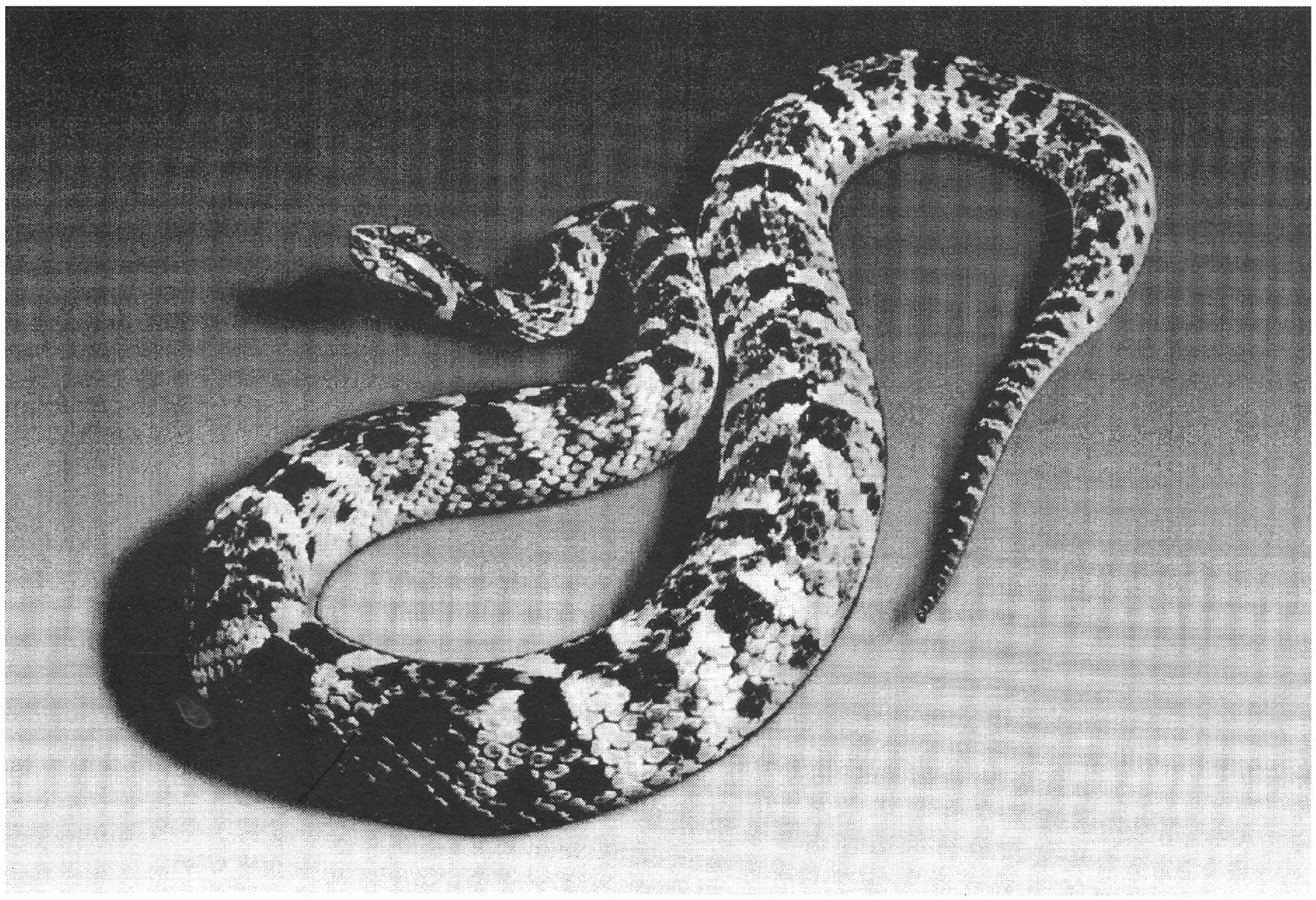

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Range Extension for *Bothrops leucurus*

Dean Ripa
4608 Cedar Avenue
Wilmington NC 28405

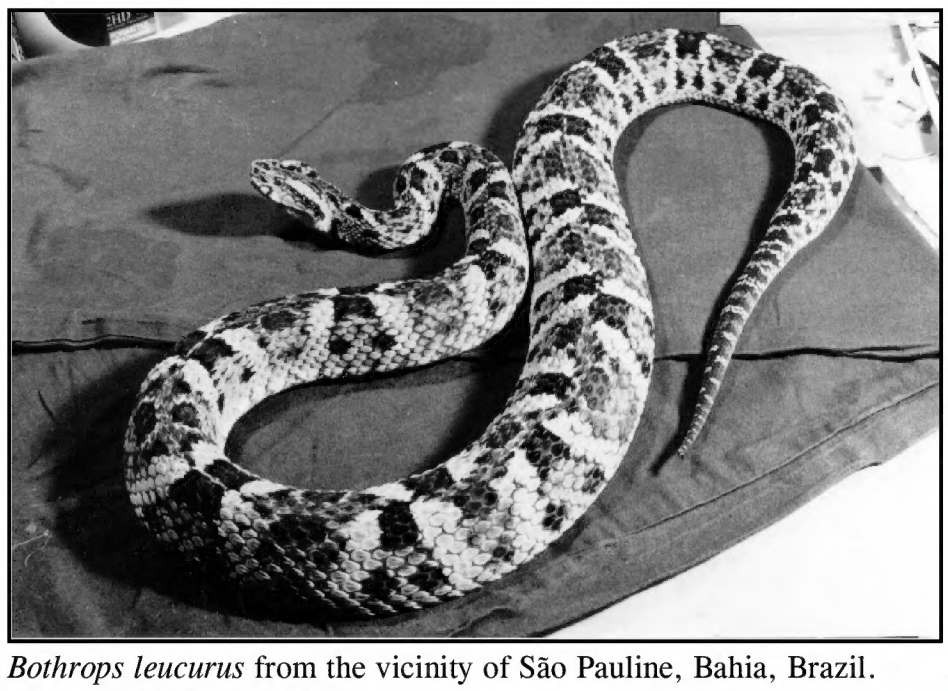
Regarding the distribution range of *Bothrops leucurus* (Wagler), Campbell and Lamar (1989) report: "Distribution Brazil. This species is known only from the region of Salvador in Bahia. . . . There is an unsubstantiated record from Sergipe. The vertical distribution ranges from near sea level to about 300–400 m."

They go on to describe the species as "a slender terrestrial lancehead with a reported maximum length of 1,117 mm. . . . Poorly known."

On a collecting trip to Brazil in February 1994 I spent a month in São Pauline, Bahia, a tiny cattle town approximately 60 km west of Itamaraju, in the Atlantic versant of southern Bahia. This is about 700 km south of Salvador, Bahia—that is, 700 km south of the locality described by Campbell and Lamar (ibid.). Here elevations are similar to those Campbell and Lamar reported, approximately 50–300 m.

In the hopes of obtaining a bushmaster, *Lachesis muta rhombeata*, I put a bounty on live venomous snakes. Within three weeks I had received from the local populace over 80 *Bothrops leucurus*, indicating they are very common. In fact, they proved to be the most common pit viper in the area. By way of comparison, I also received seven *Bothrops pradoi* and six *B. jararaca*—and only one bushmaster came in.

Examples of *Bothrops leucurus* were taken from primary forest, coco plantations, swamps, and cattle pasture. Here this species goes by the local name jararacussu (not to be confused with *Bothrops jararacussu*, which ranges much further south). They are much feared, and have caused deaths locally. I witnessed the death of a 12-kg dog (bitten on the left hind leg) in about 4–6 h, with massive swelling, ecchymosis and bullae covering one-third of the animal's body. The dog's owner said it had been bitten by a *pico de jaca* [bushmaster]; I investigated and was led to a dry, hot, dense scrub and cane thicket in a disused agricultural area—a place unsuitable to bushmasters. A thorough search revealed a 1200-mm *B. leucurus* extended at full body length on a branch that I was just about to slash with my machete! Among local plantation workers, amputations due to bites of these snakes were not uncommon. The area is rather remote, on bad roads typically flooded out most of the year, and antivenin is unknown.



Bothrops leucurus from the vicinity of São Pauline, Bahia, Brazil. Photograph by the author.

Campbell and Lamar (ibid.) report *B. leucurus* being found only in the Salvador region (their Figure 226 is a photograph of an example from Feira de Santana). Thus the find at São Pauline in southern Bahia constitutes a range extension of over 700 km south of the known range. I believe it must range even further south yet, probably into Espirito Santo, as the habitat is not noticeably different.

This is evidently a much larger species than Messrs. Campbell and Lamar have described (they report a maximum length of 1117 mm). Some wild-caught specimens exceeded 1500 mm; and several of my captive-raised specimens at age 3 years are already topping 1500 mm, so one may presume *B. leucurus* to reach lengths comparable to the largest *Bothrops* in South America (*B. asper* excluded), with a maximum total length in excess of 2000 mm. It would seem that "1,117 mm" reflects an average adult length rather than a maximum.

These snakes are not entirely terrestrial, several specimens being encountered in trees.

Stomach contents revealed such diverse prey items as toads, frogs, lizards (in young examples) and a variety of rodents and birds. The live specimens (about 60 of the 80+ collected) were deposited at the Instituto Butantan live collection in São Paulo, where their identity was verified by Dr. Guiseppe Puorto as *Bothrops leucurus*.

In their remarks on *Bothrops pradoi*, which is known to occur in southern Bahia, Campbell and Lamar (ibid.) suggest that "the relationship of this species with *B. leucurus*, and the possible role of sexual dimorphism in the latter, merit scrutiny." Another mention by them, in the caption to their Figure 226, states "specimens referable to this species and *B. pradoi* may be indistinguishable from one another." Among breeding examples here, I have noticed some sexual dimorphism of pattern, but more striking is the ontogenetic color change, where neonates and juveniles of both sexes of *B. leucurus* may strongly resemble *B. pradoi*, especially in the supralabial markings, which fade as the snake ages. Are these then the same species of snake? Whatever the case, the find at São Pauline demonstrates that *B. leucurus* is actually sympatric with what is now known as *B. pradoi*, not allopatric as was formerly thought. They freely interbreed in captivity and undoubtedly may do so in the wild. All this makes the case for regarding them as distinct species more questionable.

Additional note

Another unexpected find on this trip was a coral snake to

my knowledge not previously recorded from the area: six *Micrurus ibiboboca* were taken. The writer begs any information regarding this species being found in extreme southern Bahia (vicinity of Itamaraju).

Acknowledgment

This article is dedicated to George Tregembo, "last of the old time wild animal men." The writer acknowledges to him an incalculable debt.

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Bull. Chicago Herp. Soc. 32(2):26-27, 1997

Miscellaneous Notes on the Caicos Islands Dwarf Boa, *Tropidophis greenwayi*: Reproduction, Locomotion and Maximum Size

R. Michael Burger
2009 Avenue Road
Toronto, Ontario M5M 4A5
Canada

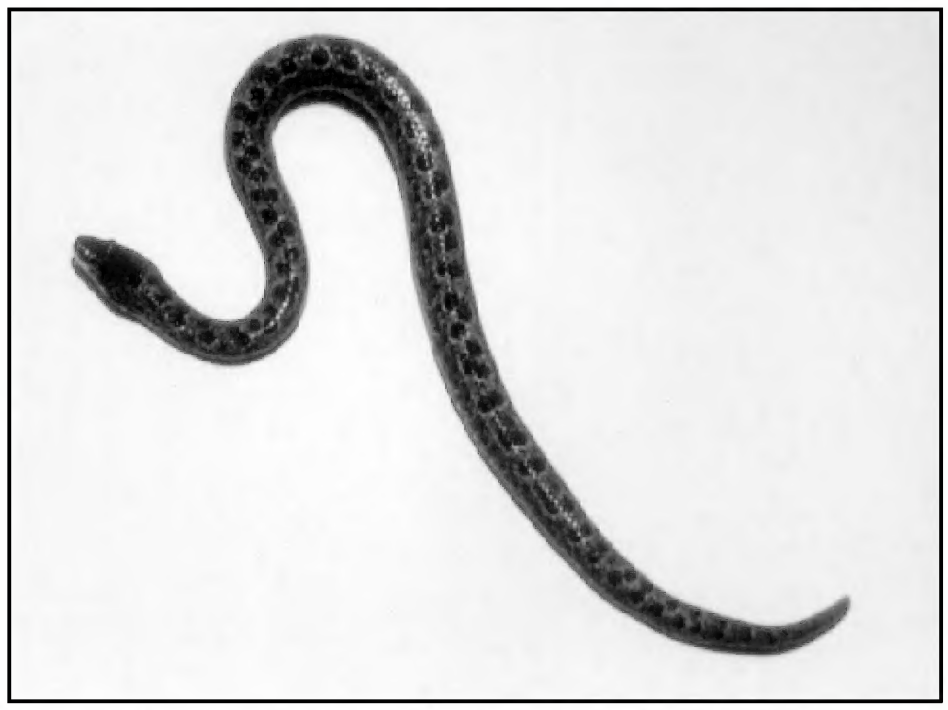
The Caicos Islands dwarf boa (*Tropidophis greenwayi*) is a small, terrestrial species found on a number of islands in the Caicos Islands archipelago. Originally described in 1936 based upon two specimens collected on Ambergris Cay (Barbour and Shreve, 1936), little was known of this secretive snake until the mid-1980s when Iverson (1986) documented its natural history. The following notes report on litter size, locomotory behavior and the maximum size attained by *T. greenwayi*.

Reproduction

A 330-mm total length (TTL) female was noticeably heavy at midbody in late March 1996. Temperature gradients within the cage allowed the female to thermoregulate throughout the gestation period, though it was observed she rarely occupied areas warmer than 26-27°C.

Parturition occurred on 14 November 1996 when two neonates were discovered in the enclosure, which gave an approximate gestation period of 225 days. Upon inspecting the female it was determined that she was still heavy with young. During the early evening hours of 15 November two more neonates were observed within the female's cage, prompting a thorough search revealing no other young. On 16 November an additional neonate was found; at this time the substrate was completely changed. The following evening (17 November) another neonate was discovered. At 1010 h on 19 November the female was observed giving birth to still another neonate. Parturition of this seventh neonate took approximately 10 minutes, after which it was observed shedding within minutes of birth. The female's weight following delivery of the last neonate was 22.3 g and the mean total weight and total length measurements, respectively, for the litter were: $\bar{x}$ = 1.35 g, 118 mm.

Iverson (1986) noted litter sizes of 2–3 young, though he recorded higher follicular counts (up to 8), suggesting that some follicles are not ovulated. Ross and Marzec (1990) additionally cite a litter of 4 from the Houston Zoo. The presumed mating season of January to February with parturition coinciding with the June rainy season on the Caicos Islands as reported by Iverson (1986) would give a four- to six-month gestation period, much shorter than the 225 days as noted here. This litter is not only large in size but interesting in that it was delivered over a six-day period.



Neonate *Tropidophis greenwayi* in the process of sidewinding. Photograph by the author.

Locomotion

A one-day-old captive-born *T. greenwayi* (115 mm TTL) was placed on a flat table surface for photography purposes. Almost immediately upon release, the neonate made an effort to escape by sidewinding. It was later found that others from the litter utilized the same means of escape, which is quite different from the slower, more deliberate crawling method exhibited during their nocturnally active hours.

Sidewinding has been documented in *Tropidophis* before. Smith et al. (1991) reported sidewinding in young *T. haetianus* which was described as similar to the locomotory behavior of *Crotalus cerastes*. This mode of locomotion has not been observed by the author in larger subadult to adult *T. greenwayi*.

Maximum size

T. greenwayi is one of the smaller species of insular *Tropidophis*, with a maximum size of 370 mm TTL (Schwartz and Henderson, 1991; Tolson and Henderson, 1993). A large, long-term-captive female was acquired by the author, and was immediately noted to be unusual both in size and coloration. The specimen was measured in a relaxed position and weighed on an Acculab digital scale. Measurements taken: length 450 mm TTL, weight 64 g. Characteristics of specimen: Parietals in contact, smooth scales, 27 scale rows midbody, 161 ventrals, 30 subcaudals, yellow tail tip.

This female is unusual in that her dorsal spotting is a dark olive green in coloration, unlike the dark gray to brown color usually noted in *T. greenwayi*. While this color has not been documented in *T. greenwayi* before, *Tropidophis* species in general are highly variable in coloration and scalation; this may simply be an individual or population variation. Unfortunately, this animal was acquired through the commercial trade and lacks locality or collection data.

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Bull. Chicago Herp. Soc. 32(2):27, 1997

Record Small Size for the Western Pigmy Rattlesnake

Paul Freed
Section of Herpetology, Houston Zoological Gardens
1513 N. MacGregor Drive
Houston, TX 77030

The Houston Zoological Gardens has maintained and displayed western pigmy rattlesnakes (*Sistrurus miliarius streckeri*) for well over 20 years. During that time, no concerted efforts have been made to encourage reproduction in this group. In fact, to prevent reproduction, these rattlesnakes have not been hibernated nor even cooled down for any length of time since their arrival at the zoo.

Despite this, one of our long-term captive females (five years plus) gave birth on 12 April 1993 to six live and two stillborn neonates. The live young ranged in size (total length) from 78 to 156 mm ($\bar{x}$ = 139); the stillborn were 78 and 82 mm. Weights of the live young ranged from 0.8-4.2 g ($\bar{x}$ = 3.0); the stillborn young each weighed 1.0 g. Despite its diminutive size and weight, the smallest neonate (Figure 1) appeared normal both in its appearance (coloration and scalation) as well as behavior (locomotion, tongue flicking, etc.). This specimen, however, died six days after its birth. It was subsequently preserved and deposited in the vertebrate collection of the Carnegie Museum of Natural History in Pittsburgh, Pennsylvania.

Ernst (1992) reported neonate size for *Sistrurus miliarius streckeri* ranged from 129 to 191 mm and weight from 1.8 to 5.0 g. The 78 mm/0.8 g neonate therefore represents the smallest recorded size for this species.

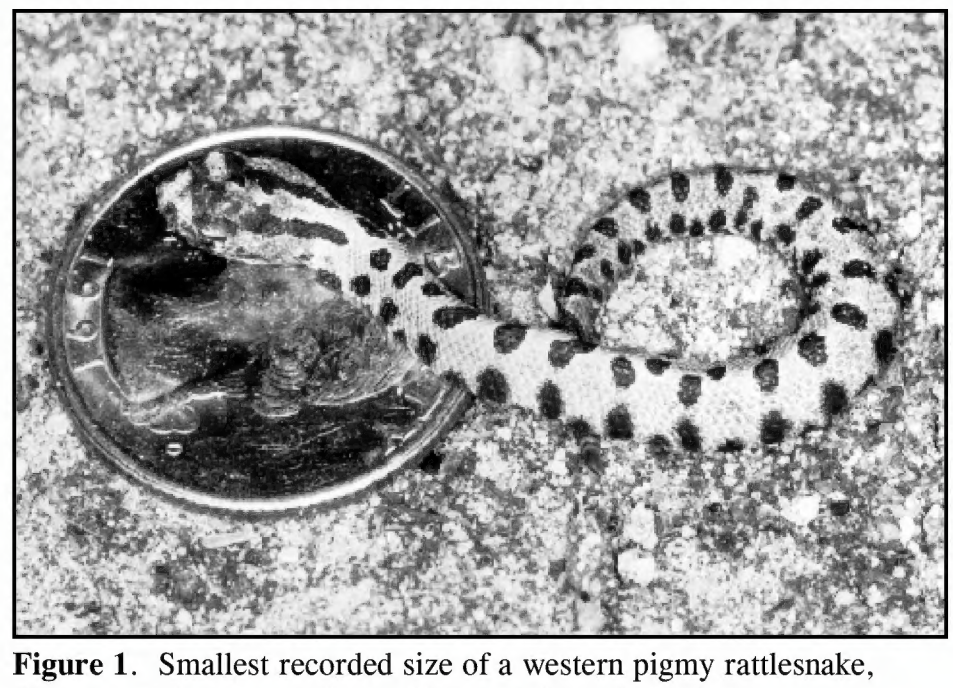

Figure 1. Smallest recorded size of a western pigmy rattlesnake, *Sistrurus miliarius streckeri*. Photograph by the author.

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Use of Claws by the African Clawed Frog (*Xenopus laevis*) to Facilitate Ecdysis

Malcolm L. Mc Callum
Department of Biology, Health, and Physical Education
Belleville Area College
2500 Carlyle Avenue
Belleville, IL 62223

Introduction

The African clawed frog (*Xenopus laevis*) is a small pipid frog indigenous to central, eastern, and southern Africa, and recently introduced to southern California (Capula, 1989). As with all pipids, this species is primarily aquatic, only occasionally leaving the water in captivity (pers. obs.). The name *Xenopus* means "strange foot," referring to the sharp "claws" located on the medial three toes of each hind limb (Pyrom, 1987). Similar species such as *Hymenochirus boettgeri* also share this characteristic. The function of these claws has been subject to controversy.

Materials and Methods

Five 2–5-cm specimens were housed individually in 4-liter squat fish bowls. The fish bowls were three-quarters filled with water without any gravel or other amenities. Frogs were fed a varied diet of worms, arthropods, fish food, and raw meat. As the frogs grew, use of the claws during ecdysis was recorded and compared between individuals to adequately describe the behavior.

Results

Xenopus laevis uses the claws on its hind feet during every molt to loosen and break up the old skin so that it can be properly shed.

This species positions the rear limb so that the bottom swimming surface of the foot is facing anteriorly with the claws against the dorsum of the pelvic region. Using a caudocranial motion the frog scrapes the claws across its dorsum. The abrasive action of the claws against the dorsum cuts open the old skin, allowing it to shred off the body in strips. Similar behaviors are used on the dorsal surface of the rear limbs only the motion is from proximal to the distal end of each limb. *X. laevis* was not observed using the claws to shred old skin on the ventral surface of body or legs.

Discussion

If living a thoroughly aquatic existence, ecdysis can be a problem. *Xenopus laevis* is common to slow moving, muddy waters (Pyrom, 1987) where abrasive objects may be especially uncommon. Molds, algae, aquatic plants and mosses tend to coat abrasive surfaces making these surfaces less effectual when rubbed to remove skin. If old skin is not removed health problems may result. It appears that the claws of this species are special adaptations to facilitate ecdysis. Individuals without these claws would be at a selective disadvantage because skin would not be as shed quickly by such individuals. Because ecdysis could be delayed, unclawed *X. laevis* could develop bacterial infections between the old and new layer, or on the old layer which could spread into the healthy ectoderm disabling and eventually killing such individuals.

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Bull. Chicago Herp. Soc. 32(2):28, 1997

Behavioral Note: Basilisk Lizard Consumes Poison-dart Frog

Ruston Hartdegen
Department of Herpetology
Dallas Zoo
612 E. Clarendon
Dallas TX 75203

One adult male *Basiliscus plumifrons*, 15 *Dendrobates auratus* and three *D. pumilio* are housed in an exhibit measuring approximately 366 cm × 152 cm × 274 cm. No aggression had been observed at any time during a two-month period they had been housed together. On 9 September 1996 six *D. leucomelas* were introduced to the exhibit. On the following morning the *B. plumifrons* was observed pursuing and consuming one *D. leucomelas*. On several occasions I have observed multiple *D. auratus* and *D. pumilio* active only inches from the basilisk without incident. *Dendrobates leucomelas* is not sympatric with *B. plumifrons* in the wild. However, *D. auratus* and *D. pumilio* do occur within the range of *B. plumifrons*. Three more *D. leucomelas* specimens are also presumed to have been consumed. All specimens are captive born.

Bull. Chicago Herp. Soc. 32(2):29-30, 1997

Prompt Cage Cleaning

Mark Witwer
1029 Sunhigh Drive
West Chester, PA 19380

A great deal has been written about the importance of keeping herp cages clean (Mattison, 1991; Michaels, 1985; Rossi, 1992; Wright, 1993); most of us are therefore aware of the need to promptly remove waste material or shed skins from our animals' cages. Still, if you are like me, you sometimes face a temptation to put off cleaning a cage for a day or two until a more convenient time. Perhaps now and then we all need a bit of encouragement that this cleaning really does need to be done now. It is in this spirit that I offer the following thoughts.

Moving Mambas

I was reminded of the cleaning issue recently, as I reviewed an article by Michael J. Angilletta, Jr. (1994). He conducted a radiotelemetry study of two eastern green mambas (*Dendroaspis angusticeps*), observing them daily over a period of 27 days. The snakes tended to remain at one site for several days, with only small (< 5 m) changes in position. What caught my attention was that larger movements between sites (> 10 m) occurred after the snakes defecated or shed. I wonder if natural selection might have favored moving away from sites of fresh defecation or shedding as a means of avoiding the parasites potentially associated with feces or cast-off skins. Aside from parasites, fecal material and urates themselves are skin irritants to snakes, and irritated skin is more vulnerable to infection (Wright, 1995). Further, the rapid bacterial breakdown of nitrogen-rich wastes (like uric acid) in a warm, humid environment produces ammonia, a respiratory tract toxin (Schotman, 1996). In a warm, humid microhabitat with limited air circulation (such as beneath loose tree bark or in some burrows), the ammonia might accumulate to pose a hazard. Good husbandry is ultimately based on good natural history information; the observation that mambas relocate after defecating or shedding may be reminding us that snakes are not designed to be in prolonged contact with their own wastes. In a cage, a snake does not have the option of leaving, so the keeper needs to remove such materials.

My Mistakes

A few years ago, I had an embarrassing lesson to this effect. I had a larger collection than I do now, and had them on a regular (but not necessarily *immediate*) cleaning regimen. This seemed to work fine for most of my animals, but an adult female snow corn snake (*Elaphe g. guttata*) developed a bacterial infection in her belly scales. We caught it early and antibiotic treatment easily took care of the problem, but I took this as a warning. I needed to clean the cage more promptly.

It is easy to understand why wastes and uneaten food should be removed from cages promptly, but why shed skins (Rossi, 1992)? Two years ago I had an unusual episode with a neonate rosy boa (*Lichanura t. trivirgata*) that illustrates at least one reason. The snake apparently crawled into a length of shed skin (rosies like to hide in snug places) and upon emerging from the other end, crawled again into the opening it had originally entered, passing its own tail in the process. I discovered the poor thing trapped inside this "doughnut" of its own shed skin. It does not take too much imagination to see how this might result in dehydration or suffocation, if the snake is not found soon enough. (If others have experienced or heard about similar cases of snakes being endangered by their own sheds, I would very much like to hear about them.)

The Fine Print

Although prompt cage cleaning is generally recommended, there seem to be specific cases in which a bit of "mess around the house" makes snakes feel at home. Putting a female boid's freshly shed skin (or even a skin plus some feces) in with a breeding group has been suggested to stimulate mating (Ross and Marzec, 1990). Chiszar et al. (1995) found that cage cleaning caused both increased investigatory behavior (i.e., tongue-flicking) and defecation in snakes. (I always thought my snakes had a cruel sense of humor, immediately messing up their freshly cleaned cages!) If these behaviors indicate stress from having familiar odors removed (and it is not clear that they do), might high-strung animals, or ones that are failing to thrive despite apparently adequate husbandry, respond well to a less rigorous cleaning regimen? Even if so, it should be noted that this does not necessarily mean ignoring a dirty cage! Chiszar and his colleagues found that returning a small piece of soiled paper, or even another odor-producing material which was in the cage before cleaning, to the cleaned cage significantly reduced the rate of tongue-flicking afterward. So even if *extended* contact with wastes proves beneficial in some situations, this may not require *extensive* contact with wastes. More study needs to be done in this area of cage cleaning and its effect on captive reptiles. At the moment it looks like prompt cage cleaning should be the rule, but experienced keepers might find carefully chosen exceptions to the rule helpful in specific circumstances.

Conclusion

Captive herps are very much at our mercy. Some behaviors that protect them in the wild may not be possible in a cage. If it is neither natural nor healthy for a herp to be in extended and/or extensive contact with its wastes, then we need to compensate for the fact that the animal cannot leave. Unless specific husbandry goals dictate otherwise, the wastes should be removed promptly. If cleaning is being reduced for a specific purpose, the reduction should be no more than seems necessary to accomplish the purpose. To do otherwise puts the animal at risk, and sooner or later problems may result.

It may be inconvenient, but it pays to clean that cage right now.

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Bull. Chicago Herp. Soc. 32(2):30, 1997

Book Review: *A Field Guide to the Reptiles and Amphibians of the Hawaiian Islands* by Sean McKeown. 1996. 172 pp. Diamond Head Publishing, Inc., Los Osos CA. Hardbound and softbound versions available. ISBN 09650731-0-6.

Ray Pawley
Curator of Amphibians and Reptiles
Chicago Zoological Park
Brookfield, IL 60513

This book is all new and contains essential information not available in most field guides. The majority of herp field guides are modeled after bird and mammal publications which mostly specialize in field characters and usually contain only enough illustrations to clarify identification points. Unlike most other field guides, the author has expanded the contents of this work to include topics in addition to the standard identification format, thereby heightening its value substantially. For example, based on his extensive background in herp management in captivity, he includes categories on "Care in Captivity" and "Interesting Facts" for species where this information is appropriate. His husbandry recommendations are state of the art/science and are valuable to professionals and amateurs alike. With Hawaii's unusual selection of terrestrial ectotherms (33 species), many introduced and most not found elsewhere in the United States, the author has chosen to expand the information content of his subject to appeal across a much broader audience range than is typical. The unique herpetofauna of Hawaii includes: five frog species, one of which is native to Japan; Jackson's chameleons; eight species of geckos; five species of skinks; four iguanids; a blind snake; a native venomous sea snake; three freshwater turtle species, two of which are Asian softshells; and five native sea turtles.

The multiple large, clear photos of each of the reptiles and amphibians, including the developmental stages of many anurans, and habitats these animals occupy, are especially helpful in understanding species-specific needs in captivity. These illustrations are also very useful in setting up and arranging exhibits. In this regard, and as one who has never had the opportunity to visit Hawaii, I find this field guide to be especially valuable.

Island populations of any animal species are especially vulnerable, and the author's inclusion of a species that has turned up at airports and dock areas but which is not yet known to exist in Hawaii, the brown tree snake (which has devastated Guam's avifauna), is extremely important in underscoring the need to keep this species out of the Islands. With its inclusion, the author is building a cadre of observers capable of identifying such an intruder, hopefully before (instead of after) it becomes established. His point is backed with his historical comments on species that have already become serious destroyers of wildlife in the Islands. I do not know of any other field guide that includes a species that might (because of extensive movement of military cargo) occur in the future, in the geographic area covered.

Not content with limiting his publication to the role of identifying an amphibian or reptile in the field, the author calls attention to the looming environmental factors that are impacting many of the species in Hawaii. It encourages the recruitment of more amphibian watchers, reptile watchers, and environmental quality watchers (just as there are already legions of bird watchers) and asks every reader to become a caring observer and steward.

I highly recommend this book for reasons given above, for anyone interested in herps, the environment or nature generally.

Bull. Chicago Herp. Soc. 32(2):31-33, 1997

HerPET-POURRI

by Ellin Beltz

Dead snake fan found wrapped in reptile

The death of a 19-year-old Bronx, New York, man found in the coils of his 12-foot pet Burmese python outside the door to his apartment appears to have been an accident. His mother said, "I begged him to get rid of it. I even threatened to call police. It's too late now." The man's body was found by a neighbor leaving the adjoining apartment, "His door was open, she said. 'I saw him laying on the ground, facedown. . . .' Blood was pouring from his nose and the snake across his body," according to the *New York Daily News*. The 45-pound python was captured and taken to Bronx Zoo who released it to animal control officers. Other snakes that belonged to the man were left in the apartment which is shared by his mother and two brothers. [October 10, 1996, from Denise and Frank Andreotti]

International reaction to U.S. court ruling

The *Indian Express* reports that the Indian government has filed an appeal to the "court-induced ban on imports into the U.S. from nations not having a clear policy on turtle conservation." In other words, if other countries don't use Turtle Excluder Devices [TEDs], the U.S. can't let the shrimp into the country. The U.S. market is 15 percent of the Indian export market although no one explains why one of the poorest countries in the world would be exporting protein. Reportedly, most of India's shrimp fleet are "small fishing vessels and kattamarans [which] have no need for the device since they cannot venture fare into the sea where turtles occur. In fact, [TEDs] are not common in India . . . [although they] cost around 3000 rupees and do not require sophisticated technology to manufacture." [October 25, 1996, from Harry Andrews]

Turtle recovery

Michael Klemens has been a tireless campaigner for turtle conservation and recovery. For the past six years, the Turtle Recovery Program (TRP) he heads at the Wildlife Conservation Society in the Bronx, New York, has worked to address threats to turtle survival and species recovery worldwide. Over 25 action plan priority projects have happened with support from TRP and all emphasize the importance of involving local people in the plan. In India, a local grad student and tribal people work together to save the Travancore tortoise (*Indotestudo forstenii*) and the cane turtle (*Geoemyda silvatica*) by training dogs to sniff the turtles out of the forest. Turtles are then tagged and transmitters installed for a radio-tracking program. There's too much more in the annual report to summarize in a paragraph, so if you'd like to read the rest—or become involved in the TRP—now's the time to sign up as a sponsor. Please make checks payable to "WCS - Turtle Recovery Program" and mail to Michael Klemens, Wildlife Conservation Society, 185th street and Southern Boulevard, Bronx, NY 10460. Please include your name and address even if your support is "in the name of" someone else. All donors receive recognition in the year-end report. The 1996 list reads like the "Who's who" of turtle lovers in the U.S.

Confiscated tortoises in Canada

At least half of 232 Indian star tortoises have been very ill since they were confiscated by Customs Canada officials in early December, 1996. They had been shipped in egg cartons from southern India, through Singapore and Hong Kong before arriving in Toronto. One was dead on arrival and nine others died from dehydration after confiscation. Customs officials arrested a British national with the animals as they arrived on a flight from Hong Kong. The tortoises had been in the man's carry-on luggage and are estimated to have a street value of $185,000 Canadian. [*The Sunday Sun*, Toronto, Ontario, December 1, 1996, from Ted Teachout]

***Froglog* appeal**

W. Ronald Heyer, Chair of the Declining Amphibian Task Force, writes "This past year has been another productive year. . . . As you can tell from reading *Froglog*, there continues to be a lot of activity on many fronts concerning declining amphibian populations. We are planning an ambitious campaign. . . . Help us meet that goal." Please make checks to "Smithsonian/Conservation and Science of Amphibians" and mail to Heyer, NHB mail stop 180, Smithsonian Institution, Washington DC 20560. Supporters receive a subscription to the journal although frog lovers with web access can see it at <http://acsinfo.open.ac.uk/info/newsletters/froglog.html>.

Banned in Oregon?

The December 1996 issue of the Oregon Herpetological Society Newsletter contained a list of soon to be prohibited "exotic" herps including: African clawed frog, brown tree snake, snapping turtle, pond slider (all *Pseudemys*/*Trachemys* species), Chinese pond turtle, all non-native *Clemmys* and *Chrysemys*, chicken turtle, all map turtles, all softshells, and all mud turtles. The proposed ban is an effort to halt the invasion of ponds and streams by non-native wildlife and the list also includes mammals, but does not address aquarium fish (including goldfish) and pets including parrots, cats, dogs, rats, mice, ferrets and so on. There is a long list of pet reptiles which would be permitted including pythons, boas, iguanas, colubrid snakes, cobra species, helodermid lizards and chameleons. These are considered low-risk to native wildlife if they escape. A list of protected native wildlife is made part of the proposed rules, too. Herpetologists planning on attending Conservation Biology or SSAR/HL/ASIH this summer are advised to write the Oregon Department of Fish and Wildlife, Wildlife Integrity Program, P.O. Box 59, Portland, OR 97207, for up-to-the-minute information about wildlife rules, permits and protected species in that state. [John Applegarth]

Twelve dead in Texas

Lowering the water level in a local spring-fed swimming pool apparently resulted in the death of 12 Barton Springs salamanders widely reported in the national news. Texas Governor George W. Bush and other elected officials claim that listing

the salamanders as federally endangered is unnecessary and could lead to land-use regulation considered "excessive" by the Texans. An agreement between the state and the U.S. Fish and Wildlife last year traded endangered status for a state promise to conserve the amphibians. [*Austin American-Statesman*, December 11 and 19, 1996, from William B. Montgomery; *New York Times*, December 16, from P. L. Beltz]

Sound bites

• "There is a prejudice about rats. I tell my neighbors, 'I've got Norwegian long-tailed hamsters,' and they're fine, but if I say the word that begins with R and ends in T and has an A in the middle, they shriek." London rat fancier [*Wall Street Journal* and *Chicago Tribune*, July 23, 1996, from Steve Ragsdale]

• "[*The Joy of Cooking*] is one of the most famous cookbooks in this country, and it looks insensitive to continue publishing recipes for an endangered species. It would be like publishing a recipe for manatee," said a spokesperson for the Sea Turtle Survival League. Letters have been sent to publishers about the "Turtles and Terrapins" section in the book which was first published in the 1970s. [*The Gainesville Sun*, January 4, 1997, from Ken Dodd]

• "If it moves, grab it, but try not to get the end that bites," is advice a journalist from *Smithsonian Magazine* received from an anaconda researcher in Venezuela. The article is a delight and contains information of interest to herpetoculturists as well as distribution and status biologists. [September 1996, from Bill Burnett]

• "Federal authorities say only drugs surpass exotic wildlife in the dollar value of smuggled goods. Private experts say the illicit wildlife trade around the world exceeds $3 billion annually." Gaylord Shaw *Newsday* [*NW Indiana Post Tribune*, January 1, 1997, from Jack Schoenfelder]

Professional courtesy?

Ancient Egyptian legal records were found wrapped around and stuffed inside ancient mummified crocodiles collected from crypts in the last century by University of California archaeologists. The treasure trove of daily minutiae were preserved by being "recycled" as inner-layer wrappings and mummy-stuffing. Significant finds include a page from an unknown play by Sophocles and parts of an early novel about the Trojan War in addition to reams of crop reports and tax records for the period from 300 B.C. to 300 A.D. [*The Sacramento Bee*, December 9, 1996, from Fredric L. Frye]

Lifestyles of the rich and famous

"According to the *Denver Post*, media giant Ted Turner is returning native wildlife to his 350,000-acre ranch . . . in south-central New Mexico. He has already replaced cattle with bison, brought in bighorn sheep, and successfully reintroduced an imperiled subspecies of the black-tailed prairie dog. Turner said, 'If rattlesnakes were endangered, we'd be reintroducing them, too. What I'm trying to do with my ranches is restore the natural ecosystem that evolved over millions of years…' [A] former Arizona Fish and Game Department biologist [working on the project] said of his new boss, 'It's fun going to work for somebody that's more excited about environmental things than you are.'" [*Greenlines #259*, November 21, 1996, <actgreen@envirolink.org>]

And of the small and green

The smallest frog known to science was described and given the name *Eleutherodactylus iberia* in the December *Copeia*. When the new species was found in eastern Cuba, the female was sitting on a single egg in leaf litter at an altitude of 600 meters. Unfortunately, the habitat frequented by this frog is threatened by local peoples' use of the forest wood for cooking fuel. [*New York Times*, December 3, 1996, from P. L. Beltz; *Arkansas Democrat-Gazette*, December 5, from Bill Burnett; *Science News*, December 7, from Mark T. Witwer; *New Scientist*, December 7, from David Blatchford]

"This is Florida, they live here."

• So said Brian Baine of the Florida Game and Fresh Water Fish Commission (FGFWFC) in response to newcomers to the sunshine state, shocked by finding alligators in their new backyard. But the one that wandered into the auto service bay at K-mart did not seem to need his oil changed or his fluids topped off. He ran across the floor of the service area, accidentally unplugging a computer and trailing electrical wires. One mechanic taped his mouth shut with a roll of electrical tape and a local police officer put the 4-foot gator in his patrol car for a quick ride to a local lake. The officers were quick to intervene in the gator call because of the number of customers and staff who were around the loose animal. Baine said, "Some alligators carry a bacterial infection that is so great that it will kill a patient within 24 hours. It doesn't require oxygen to breed, so it zooms through your system. The wound area looks like leprosy . . . if you live." [*Orlando Sentinel*, November 21, 1996, from Bill Burnett]

• A gator trapper in Merritt Island, Florida, said that the 8-footer he removed from a storm drain by some apartments was "a battle-cruiser-size class, a person would not be a match for him, not at all." The gator was first noticed after some children saw it through a street grate and were throwing things at it. This attracted the attention of a resident who called for assistance from the FGFWFC. [*Orlando Sentinel*, December 3, 1996, from Bill Burnett]

Unwelcome in California

New contributor Scott Solar sent a clipping from the *San Gabriel Valley Tribune* which recounts the sad tale of a 30-year-old El Monte man and the alligators he inherited from his mother. She was given the creatures in the 1960s by her parents, and the four had been resident with the family, playing hide-and-seek with the authorities since 1973 when possession of alligators, crocodiles and caimans was banned in California. After all court hearings were exhausted, the man shipped the animals to an alligator expert in Texas and says he's thinking about moving to the Lone Star State himself. [November 29, 1996]

Only the snakes lose

• A 27-year-old "snake enthusiast" stole a "prize breeding python" from the Little Rock Zoo in late December. After police joined the hunt, the man reportedly released it. The snake was found dead two days later. [*Arkansas Democrat-Gazette*, December 29, 1996, from Bill Burnett]

• Bhopal, India: "The inspector-general of police in this zone . . . has directed all police stations under him to launch a campaign against snakes. He has declared that anybody bringing a snake, dead or alive, to the police station will be rewarded 10 rupees. Villagers, especially snake charmers, carrying snake-baskets have been thronging the police stations. 'We will bring at least two snakes every day. This will take care of our daily meal as long as the notice remains in force,' said a snake charmer. [The official's] crusade was triggered by a routine inspection of records which revealed that most of the unnatural deaths in his division were due to snakebite. But this tirade against snakes has angered wildlife experts here." [*The Telegraph*, September 22, 1996, from Harry Andrews, Madras]

• "I'm going to try and kill every one I see," said the mayor of Folsom in St. Tammany Parish, Louisiana. Seems Mr. Mayor was trimming bushes in his yard wearing sandals and was bitten on the right foot by a 2-foot cottonmouth moccasin. This bite landed him in the hospital for several days causing him to miss a Board of Aldermen meeting and several days of work. [*The Times-Picayune*, New Orleans, LA, September 10, 1996, from Ernie Liner]

"Animal kudzu"

As if the southern U.S. hasn't suffered enough—invaded by water hyacinth, nutria, walking catfish, and giant snakes on the loose, now Asian eels and slithering their way into lakes and rivers in Georgia. Descended from "exotic aquarium pets set free in the wild . . . it is adapting, reproducing and making itself at home. A flesh-eating predator that can grow to as long as three feet, it poses a threat to native species like the largemouth bass, the beloved game fish of the South," according to the December 8, 1996, *New York Times*. [from P. L. Beltz; *Arkansas Democrat-Gazette*, December 9, from Bill Burnett] The question is are these things edible? Can we "take" and sell exotic pest species in Chinese groceries?

Turtles 1, cars 1/3 less

Last year, Daytona Beach blocked parts of its famous driving beach to traffic after years of planning and litigation and after a season when more sea turtles than ever before nested on Volusia County, Florida, beaches. However, the number of hatchlings disoriented by lights was also up in 1996. [*Orlando Sentinel*, November 4, and December 3, 1996, from Bill Burnett]

Interactive webbed site

Shedd Aquarium virtual aquarium website <http://www.sheddnet.org>. Information on Shedd times and events. Interactive site on "Frogs!" the long-running continuing special exhibit. Hear six frogs native to Illinois, vote for the frog of the week, and more.

And the winners are...

Months ago, before the endangered species stamps were even issued by the post office, I commented in this column that a prize awaited the first receipt of herp stamps from loyal readers. First arrival of the San Francisco garter snake and the American alligator to Ray Boldt and a tie between Ray and Fred Frye for the Wyoming toad stamp. I'm sending Ray a copy of "Frogs!" the guidebook to the Shedd Aquarium exhibit, signed at the top of my article "A guide to frogs of the Chicago region," while Dr. Frye is getting a copy of my index to the *Citations for the Original Descriptions of North American Amphibians and Reptiles* from SSAR. The winner of the random drawing of all 1996 CHS contributors was Ken Dodd who will be getting a copy of the index, too.

With thanks to this month's contributors and to Bill Burnett, Karen Furnweger, Jack Schoenfelder, P. L. Beltz, Ray Boldt, Mark T. Witwer, Breck Bartholomew, Kathy Bricker, Bryan Elwood, Denise and Frank Andreotti, Valerie Du Prez, Dez and David Crawford, Steve and Patty Barten, David Blatchford, and Mark Dieterich. Special thanks to Francine Chavez and Stewart Schilling for herp coins from their respective travels this year. Francine gave me a turtle coin from the Cayman Islands and Stewart brought back a tuatara five cent piece from New Zealand! You can contribute, too. Send newspaper/magazine articles with date/publication slug showing and your name on each clipping to: Ellin Beltz, 1647 N. Clybourn Avenue, Chicago, IL 60614-5507. Please use tape, not staples if you cut the stories to pieces. Staples tear, then it's microsurgery trying to get the stories back together!

Answers to the January Herp-Acrostic

The quotation in last month's Herp-Acrostic was taken from page 22 of *Snakes of Maryland* by H[oward] A. Kelly: "Our innocent, slow-poke, timid hog-nosed viper is a wonderful bluffer. He hisses loudly and often strikes at the intruder while taking good care not to reach the mark, at the same time flattening out his head and neck like a cobra; then, if one persists, he turns over belly upward, pretending to be dead."

A. Huff
B. Adpressed
C. Kukri
D. Echidna
E. Le Crocodile
F. Last of the Ruling Reptiles
G. Yertle
H. Sidewinder
I. Nonvenomous
J. Angonoka
K. Kingfisher
L. Eastern newt
M. Spotted night snake
N. Ophidia
O. Flicker with his double tongue
P. Mephitic
Q. Aboveboard
R. Robert Mertens
S. Youthful
T. Lathes
U. Annotator
V. New Testament
W. Death adder

Bull. Chicago Herp. Soc. 32(2):34-35, 1997

The Phib File
Amphibian Q&A
by Dave Golde

Once again I have not received any readers' questions. So once again I will answer some of the more common amphibian questions I hear.

Amphibians for Beginners

What are some of the amphibians that are easy to keep in captivity for someone just starting out?

Many people who are relatively new to the herp community keep corn snakes, box turtles and leopard geckos. Even though these people may have an interest in amphibians, they are discouraged because they are told amphibians are problematic and tough to keep. Contrary to popular belief there are dozens of amphibian species that are even easier to maintain than those common reptiles. They are also very inexpensive to obtain, as well as inexpensive to maintain and feed.

The truth is some of the amphibians we find in our own backyards, or at the local pet store are simple to keep, and just as enjoyable as any reptile. For instance American toads (*Bufo americanus*) and tiger salamanders (*Ambystoma tigrinum*) can be found along railroad beds all over the eastern U.S. and in pet stores everywhere. These amphibians are perfectly content in a simple ten-gallon tank, filled with soil, leaves, and a dish of water. Give them a daily misting and a few bugs every couple days and they can live for 25 years.

I know what you're thinking: "What do they do?" Well, you can ask that question about any pet, and the truth is, they don't do all that much, but we get pleasure out of keeping them. You will find that American toads and tiger salamanders are amazingly responsive to humans, because they recognize humans as their food provider. Their antics toward humans and feeding them in general can be extremely amusing. Although it is generally not recommended, many tiger salamanders and American toads take to handling quite well. The best thing about these guys is that they do not need heat mats, rocks, lights, temperature gauges, special bedding, pinkies, mice; heck—they don't even need a lid on their tank. As long as there are some earthworms or live plants in their tank, they don't even need a cleaning very often. I would have to say that tiger salamanders and American toads are the easiest to care for of all herptile pets. They make a great primer into the world of amphibians. (For more on tiger salamanders, see last month's column.)

Here are some other amphibians that are great for beginners:

White's treefrog (*Litoria caerulea*)
Grey treefrog (*Hyla versicolor/chrysoscelis*)
Barking treefrog (*Hyla gratiosa*)
Clawed frog (*Xenopus* spp./*Hymenochirus* spp.)
Horned frog (*Ceratophrys* spp.)
Chubby frog (*Kaloula pulchra*)
Fire-bellied toad (*Bombina* spp.)
Common toad (*Bufo bufo*)
Green toad (*Bufo viridis*)
Southern toad (*Bufo terrestris*)
Eastern newt (*Notophthalmus viridescens*)
Rough-skinned newt (*Taricha granulosa*)
Fire-bellied and warty newts (*Paramesotriton* and *Cynops* spp.)

Of course many of these species have specialized requirements, so thorough research is recommended on the amphibians you choose. Information on some of the above can be found in the previous two "Phib File" columns.

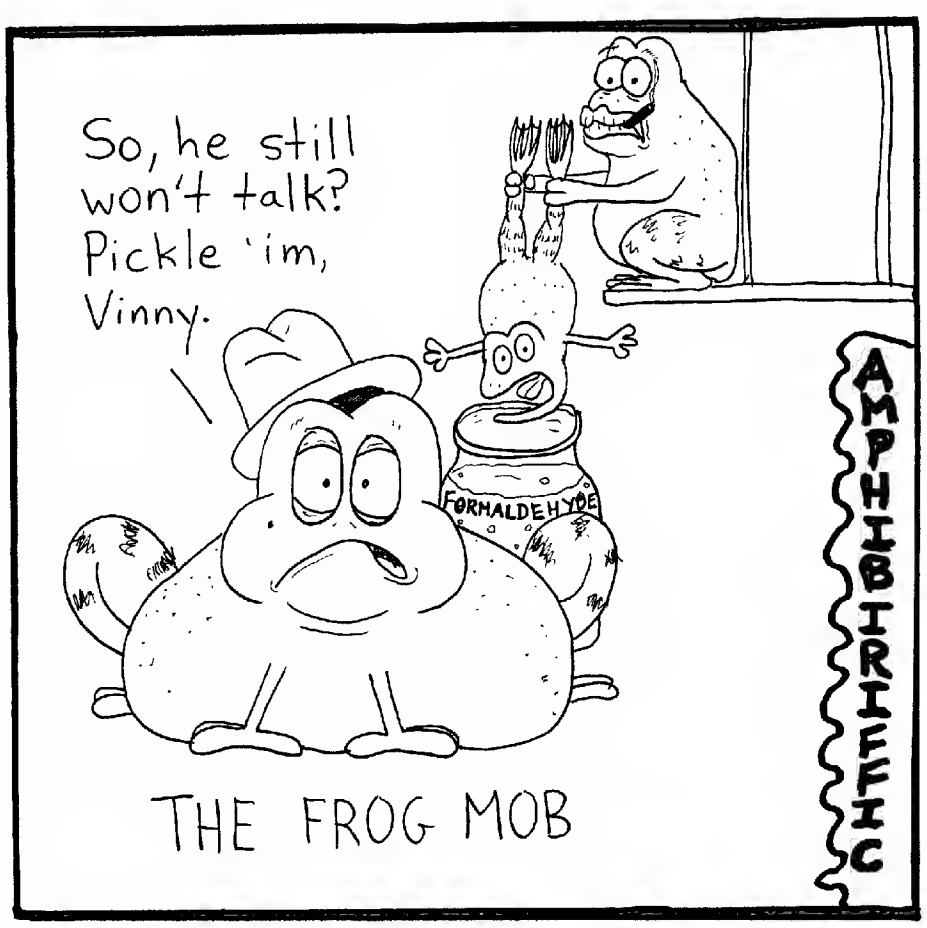
Proper Husbandry of Leopard Frogs

*What is the proper way to keep leopard frogs (*Rana pipiens *and related species) in a stress-free captive environment?*

Leopard frogs are extremely active diurnal frogs. These frogs do not make the best captives, yet they are commonly kept as pets. Often, people wind up with a leopard frog after rearing a tadpole.

Many people keep leopard frogs in aquatic or semi-aquatic environments. In these types of setups, leopard frogs tend to get very restless and nervous, eventually leading to stress-related diseases and/or badly bruised snouts. This happens because leopard frogs are not aquatic creatures. They are barely even semi-aquatic; they should be regarded as terrestrial amphibians. Leopard frogs, like many terrestrial amphibians, only seek out water to breed, for a few weeks in early spring. For the rest of the season they are mainly meadow dwellers, sometimes venturing up to three miles away from any body of water.

I personally have witnessed leopard frogs hopping about on sand dunes hundreds of feet away from water. This should be taken into consideration when housing leopard frogs; they do not like water very much.



As their habits and coloration suggest, leopard frogs feel most secure in moist, grassy areas. The most efficient way to duplicate this in captivity is by placing the frogs in a terrarium that is literally carpeted with dense grassy vegetation at least five inches high. A good way to go about creating this "artificial meadow" is via the following steps:

1. Acquire a clean glass tank, 20-gallon long (30″ × 18″) or larger.

2. Fill the entire bottom of the tank with 2–3 inches of aquarium gravel (for drainage).

3. Sprinkle filter-carbon (charcoal) over the gravel (this provides odor control).

4. Evenly spread about an inch of topsoil over the gravel.

5. Place about a dozen nightcrawlers onto the soil. Let them work their way under the soil. (These will keep your soil clean, and fertilize it.)

6. Sprinkle grass, wheat, alfalfa, or similar seeds along the sides, back, and corners of the tank, leaving the front area seed-free.

7. Loosely spread 2–3 more inches of topsoil over the seeded layer.

8. Place a shallow dish (a microwave meal dish is ideal) buried to the soil level in the foreground of the tank.

9. Place a tight-fitting well-ventilated lid on the tank with a full-spectrum fluorescent light.

10. Water the tank daily for about two weeks.

11. Fill the dish with water, and—voila!—artificial meadow.

Put your leopard frog in the tank; mist the tank every day; offer it a few crickets every other day. The light should be left on for 8–10 hours a day. Clean the water weekly, trim the grass monthly, and your leopard frog will stay happy and healthy.

The Proper Care of African Clawed Frogs

African clawed frogs (*Xenopus laevis* and related species) are probably the single most common amphibian (if not herptile) pet in the U.S. Most are kept in a simple aquarium as though they were fish. Although they are very hardy and adaptable, there are some guidelines for keeping them happier and healthier in captivity.

Bear in mind African clawed frogs reside in the tropics and subtropics of Africa, typically in warm, slow-moving, permanent waters. Therefore the following guidelines should be applied to their captive care:

1. A ten-gallon aquarium is big enough for a single adult clawed frog. A pair of clawed frogs require a twenty-gallon long or larger.

2. Water temperature should be maintained between 68 and 72°F. The heater should be placed behind a rock so it will not be broken by a startled frog's kicking legs.

3. Water should be shallow, from 6 to 8 inches. They need to come up for air. The less they travel to do so, the less stressed they will be.

4. Filtration should be achieved by a submersible multi-filter, the flow on the lowest setting, directed into the glass to lessen the current. A rapid water flow is liable to knock them around.

5. Fluorescent lighting should be diffused through either live or plastic plants floated on the surface. Clawed frogs' eyes are light-sensitive; high light levels stress them. This also allows the frogs to hang close to the surface while resting their forelimbs on the plants.

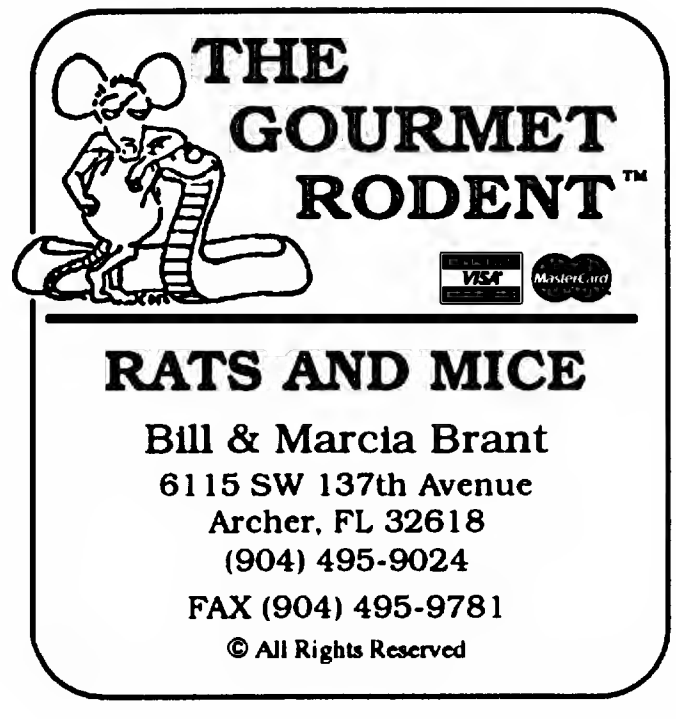
6. Sturdy, dark hiding areas should always be available, one for each frog in the aquarium. Ready-made caves or flower pots work best. Rock piles should never be used, for a frog is liable to collapse it and injure or drown itself. Without adequate hiding spots clawed frogs will become restless.

7. Gravel should not be used, for it will be kicked around and possibly swallowed. A bare-bottom tank with a few large round rocks for decoration will suffice.

8. Food should consist of a "salad" of at least a few of the following: cichlid pellets; goldfish pellets; bloodworms; brine shrimp, shrimp pellets, krill, and plankton (mini-krill). Live foods should make up at least 25% of the diet (the frogs need to get their exercise). Suitable live foods include feeder minnows, guppies earthworms and crickets. Goldfish should not be used; they are too parasitized and fatty. Food should be offered in small quantities twice a day.

By following this set of guidelines you will have a much happier, healthier, and long-lived frog. The guidelines also apply to dwarf clawed frogs (*Hymenochirus curtipes*), Surinam toads (*Pipa pipa*), rubber eels (*Typhlonectes natans*), and other highly aquatic species.

This is the third installment of my column and I've only had three questions so far. I know some of you must have amphibian questions. All I ask is that you call or write me and ask it. If you have any comments, facts, tidbits, otherwise, related to amphibians, give me a call . . . please. Dave Golde, 4506 Howard Street, Skokie IL 60076, (847) 679-1530. Thanks!



Bull. Chicago Herp. Soc. 32(2):36-38, 1997

Herpetology 1997

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

CALL VARIATION IN *LEPTODACTYLUS MYSTACEUS*: A NEW SIBLING SPECIES

W. R. Heyer et al. [1996, Amphibia–Reptilia 17(1):7-31] studied call variation in *Leptodactylus mystaceus*, a species that until now has been characterized as occurring "throughout the greater Amazon Basin, Guianas, nothern Atlantic Forest, and cerrados." The authors discovered that although morphological analysis of populations recognized as *Leptodactylus mystaceus* indicates there is one species with modest geographic variation, analysis of advertisement calls indicates there are at least two or perhaps three species involved. The differences found in advertisement calls are sufficient to act as species isolating barriers. In consequence they describe a new sibling species, *Leptodactylus didymus*. The populations with pulsed calls bear the name *L. mystaceus*; the populations with non-pulsed calls are assigned to *L. didymus*. The significance of sibling species in the genus *Leptodactylus* is discussed briefly.

VISUAL SIGNALING IN A PANAMANIAN FROG

E. D. Lindquist and T. E. Hetherington [1996, J. Herpetology 30(3):347-354] conducted field studies on the visual and acoustic behavior of the Panamanian golden frog, *Atelopus zeteki*, a species lacking a tympanic middle ear. Males displayed three stereotyped behaviors in response to playbacks of male pulsed vocalizations: foot signaling, vocalization and repositioning orientation. Frequencies of foot signaling and orientation responses were significantly increased by presentation of playback vocalizations. Vocal responses also increased (non-significantly) during the playback period and continued to increase during postplayback silence. These results provide the first experimental evidence that an "earless" anuran species displays behavioral responses to sound, and that vocalization may play an important role in communication. The forefoot waving, and possibly hindfoot raising observed in this species appear to represent visual signals used intraspecifically in male agonistic behavior. Male frogs appear to rely preferentially on visual signaling (foot signaling) as compared to acoustic signaling (vocalizing). The existence and preferential use of visual signaling in this species may be correlated with their noisy, montane stream habitat. Orientation by the frogs toward the playback speaker suggests that this "earless" species of anuran is capable of localizing a sound source.

NEW BRAZILIAN LEPTODACTYLID

C. F. B. Haddad et al. [1996, Copeia (4):965-969] describe *Hylodes heyeri*, a new species of leptodactylid frog from Eldorado, state of São Paulo, southeastern Brazil. The new species is a member of the *Hylodes lateristrigatus* group and is characterized by its large size, slightly rugose to rugose dorsal skin texture, robust body, and high number of notes per call. Descriptions of the advertisement call and information on natural history are provided.

DIMINUTIVE NEW FROG FROM CUBA

A. R. Estrada and S. B. Hedges [1996, Copeia (4):852-859] describe *Eleutherodactylus iberia* from the Cuchillas de Moa in eastern Cuba. At approximately 10 mm snout–vent length, it rivals the Brazilian brachycephalid *Psyllophryne didactyla* in being the smallest species of tetrapod. The new species appears to be most closely related to the Cuban species *E. cubanus*, *E. limbatus*, and *E. orientalis*; and all have the same small clutch size (one). The *limbatus* group is erected to accommodate these four diminutive leaf-litter species. The smallest species of anurans, representing four families (Brachycephalidae, Leptodactylidae, Microhylidae, and Sooglossidae), are compared to examine the effects of miniaturization on morphological and life-history traits. Digital reduction and loss of vomerine teeth are common, and most diminutive species have a high frequency (> 5 kHz) call and lay one or a few eggs on land that undergo direct development.

EGG-EATING IN THE GRAY RAT SNAKE

S. J. Mullin [1996, Amphibia–Reptilia 17(4):387-394] reports that the gray rat snake (*Elaphe obsoleta spiloides*), a facultative oophagic colubrid species, exhibits a stereotyped behavior when ingesting quail eggs, The anterior third of the body is contracted in a forceful series of S-shaped curves, and, at the moment of shell rupture, the region of the body posterior to the egg is rapidly and laterally flexed into a U-shaped bend. The ventral aspect of hypapophyses in the cervical region can be palped along the roof of the dissected esophagus. Scalation along the throat and anterior neck regions is polymorphic, and scale rows are more numerous (increasing distensibility when swallowing eggs) than along areas posterior to the neck. Radiographs reveal that eggs may pass into the gut of large snakes without being cracked. Once the contents are extracted, the shell passes through the remainder of the gut, appearing in the feces with sides folded inward to form a narrow cylinder, tapered at both ends. Gray rat snakes appear to possess adaptations facilitating ingestion of bird eggs while not interfering with the potential to ingest other prey types.

CANE TOAD BREEDING SITES

M. Evans et al. [1996, Copeia (4):904-912] sampled waterbodies in diverse habitats throughout Venezuela for biotic and abiotic characteristics that might influence breeding site choice in *Bufo marinus*. Sites where breeding by *B. marinus* was present differed in many respects from sites where breeding was absent, and these differences varied between habitat types. The combination of variables that best explained the difference between breeding sites and nonbreeding sites across all habitats was the transparency and pH of the water, the density of the vegetation surrounding the waterbody, and whether the waterbody was temporary or permanent. The size and abundance of fish apparently was not important in breeding site choice.

NEW CENTROLENID FROG FROM COLOMBIA

J. D. Lynch and P. M. Ruiz-Carranza [1996, Herpetologica 52(4):525-535] describe a new centrolenid frog, *Cochranella armata*, from cloud forests in the Sérrania de los Paraguas in the Cordillera Occidental of western Colombia. Males have patches of cornified nuptial spines on the thumb, and the species appears allied to *C. balionota* and *C. griffithsi*. Prepollical spines seem to be universal in the family and are concealed in all but one species (*Cochranella spinosa*). The authors review the occurrence of nuptial excrescences in the family Centrolenidae.

TIMBER HARVESTING AND THE PEAKS OF OTTER SALAMANDER

J. C. Mitchell et al. [1996, Amphibian & Reptile Conservation 1(1):15-19] note that the Peaks of Otter salamander (*Plethodon hubrichti*) is endemic to a small portion (19 km long) of the Blue Ridge Mountains in Virginia. Its habitat is limited to elevations above 443 m in deciduous forest and densities are highest in areas containing mature hardwoods. Much of its range lies within a high timber-producing area owned by the National Forest Service. The authors report preliminary results of a multiyear study, based on data collected in fall 1994 and spring 1995. Comparisons of salamander abundance on replicated transects in recent clearcuts, older clearcuts, recent shelterwood sites, and mature sites revealed no statistically significant differences. However, recent clearcuts consistently supported fewer salamanders than did other sites. Salamanders in mature sites consumed significantly more soft-bodied prey than those in other sites. Numbers of hard-bodied prey did not differ among sites. Timber harvesting practices do not eliminate this species but may diminish population size and diet quality.

PHILIPPINES MOUNTAIN HERPETOFAUNA

R. M. Brown et al. [1996, Herpet. Nat. Hist. 4(1):1-22] present species accounts for 13 anurans and 39 reptiles (19 lizards, 19 snakes and one turtle) from ten localities within the mountainous Zambales Province of west-central Luzon Island, Philippines. Forty-five of the 52 species included in this report constitute new geographical records (range extensions) as virtually no literature accounts of the Zambales herpetofauna existed prior to this work. The paper includes accounts for many rare Philippine amphibian and reptile species, most notably an unidentified ranid frog of the genus *Platymantis* and the recently rediscovered *Sphenomorphus beyeri*, a lygosomine scincid known previously to the National Museum of the Philippines/Cincinnati Museum of Natural History Philippine Biodiversity Inventory from only a single specimen collected in 1922. Information on habitat and behavior of several species is presented. The suspected catastrophic impact of the recent eruption of Mt. Pinatubo on the habitat of amphibian and reptile communities is briefly noted. Several relevant species records for the neighboring Bataan Province are included to provide context for the Zambales Province records within the greater geologically and zoogeographically distinct Zambales Range massif.

LONG-NECKED TURTLE NAVIGATION

T. Graham et al. [1996, J. Herpetology 30(4):467-477] report that overland movements by the Australian chelid, *Chelodina longicollis*, have been documented extensively, and their relative straightness has led observers to conclude that these turtles must have a navigational sense. They observed terrestrial migration by adult *C. longicollis* between a permanent freshwater lake and an ephemeral swamp in Jervis Bay National Park, New South Wales, January–March 1994. Migrating turtles used similar nonrandom paths to reach their goal; movements were exclusively diurnal and occurred only under sunny conditions. Experimental studies of the orientation mechanism showed that on sunny days turtles from 2.5 km away demonstrated highly significant directional orientation, but that this ability was disrupted on overcast days. Animals field-tested from a distant (23 km) population oriented randomly. Turtles acclimated to a 6 hr phase-advanced light regime demonstrated a clockwise shift in their angle of orientation which was not significantly different from the expected 90°, thus implicating a biological clock component in their sun-compass orientation. Open field vs. arena (no view of horizon) trials suggest the probable use of terrestrial landmarks in navigation. Olfactory cues may play an important role in terrestrial orientation because animals tested in a Y-tank showed highly significant directional preference when swamp mud and debris were used in one of the arms.

COLOR CHANGES IN TREE LIZARDS

R. L. Morrison et al. [1996, Copeia (4):804-812] show that iridophores, pigment cells that structurally reflect the blue color in belly-patch scales of the lizard *Urosaurus ornatus*, are physiologically active. The wavelengths of light reflected by these cells change in response to temperature and osmolarity. Transmission electron micrographs show that these color changes result from quantifiable changes in spacing between layers of reflecting platelets (crystal-containing organelles) within these cells. Changes in reflecting platelet spacing at various temperatures and osmolarities explain observed changes in skin color. This is the first report of temperature-sensitive, physiologically active iridophores and a mechanism for rapid change of structurally derived color in an amniote.

AGE AND GROWTH IN LEATHERBACK TURTLES

G. R. Zug and J. F. Parham [1996, Chelonian Cons. and Biol. 2(2):244-249] note that leatherbacks, *Dermochelys coriacea*, are the largest living turtles and report that they grow faster than the smaller, hard-shelled sea turtles (Cheloniidae). Age estimates derived from a skeletochronological analysis of sclerotic ossicles from 15 adult leatherbacks and two juveniles ranged between 8.8 and 22.9 years for the adults, and less than a year and slightly over a year old for the juveniles. These age estimates analyzed by the von Bertalanffy growth model predict maturity on the average at 13–14 years for females, a minimum age at maturity of 5–6 years, and juvenile growth rates ranging between 8.6 to 39.4 cm per year. For conservation management purposes, 9 years is a likely minimum age for maturity based on the youngest adult in the sample.

CORDYLUS CORDYLUS PHEROMONES

W. E. Cooper, Jr., et al. [1996, Copeia (4):839-845] report that the Cape girdled lizard, *Cordylus cordylus*, a member of the family Cordylidae, in which pheromonal communication was previously unreported, detects conspecific pheromones and responds differently to male and female pheromones. In an arena containing a clean ceramic tile or one marked by a male or female conspecific, males tongue flicked male-labeled and female-labeled tiles more frequently than clean tiles, indicating detection of conspecific stimuli. Females detected female pheromones and tongue flicked at a higher rate in response to female than male pheromones, but tongue flicks elicited by male stimuli were not significantly greater than those elicited by clean tiles. Both sexes are territorial, and each sex is more aggressive to consexuals. Both sexes performed more tongue flicks in response to same-sex than to opposite-sex pheromones. The most likely sources of pheromones detected are secretions of femoral and possibly generation glands. Both occur on the ventral femur where transfer to hard surfaces is facilitated by regular contact.

REPRODUCTION IN A SONORAN DESERT POPULATION OF THE DESERT TORTOISE

R. C. Murray et al. [1996, Herpet. Nat. Hist. 4(1):83-88] studied a population of desert tortoises, *Gopherus agassizii*, in the western foothills of the Mazatzal Mountains in the Tonto National Forest, 48 km NE of Mesa, Maricopa County, Arizona. The objective was to report baseline female reproductive data. They monitored ten adult female tortoises with radio telemetry between 12 September 1991 and 12 September 1993. Eight of the 10 telemetered tortoises laid eggs in 1993. Oviposition occurred between 6 June and 7 August, just before and during the beginning of the summer monsoon. No tortoise laid more than one clutch. Clutch sizes ranged from three to nine eggs and were not significantly correlated with carapace length. Seven of the eight tortoises that laid eggs remained at their burrows 8–12 weeks after laying. During the same time period neither of the two nongravid tortoises was ever found in the same burrow on consecutive visits. The authors compare their data with published data from an eastern Mojave Desert population. They suggest that differences between the two populations may be related to differences in rainfall patterns.

CAIMAN POPULATIONS IN AMAZONIAN BRAZIL

P. Brazaitis et al. [1996, Amphibia–Reptilia 17(4):377-385] conducted investigations throughout the Amazonian regions of Brazil to determine the distribution and status of *Caiman c. crocodilus* populations. Observations were made on the occurrence of *Melanosuchus niger* populations. Population data for river and lake/pond habitats are reported for 39 localities. Data suggest *Caiman* populations may be depleted in many regions. *Melanosuchus* populations are fragmented and have been extirpated from eight localities which had recent populations. Amazonian caiman populations are subject to increased human predation, environmental contamination with heavy metals, habitat modification, and lack of effective protection for wild populations.

REPRODUCTION IN CALIFORNIA TIGER SALAMANDERS

I. Loredo and D. Van Vuren [1996, Copeia (4):895-901] studied breeding migrations and variation in reproductive traits of the California tiger salamander, *Ambystoma californiense,* in Contra Costa County, California, over two winter breeding seasons and three summer metamorphosis seasons (1992–1994). Initiation of adult breeding migrations followed major storm systems; in both 1993 and 1994, males arrived at the breeding pond first and stayed longer than females. Breeding population sizes of males and females varied annually and appeared to be determined by different mechanisms. Within a season, variation in weekly numbers of migrating adults was attributable only to rainfall; variation in numbers of emigrating juveniles could not be attributed to any measured environmental parameters. Sexual dimorphism in adults is expressed through longer tails in males. Annual numbers of juveniles produced varied substantially, ranging from over 1000 metamorphs in 1992 to only three in 1994. Timing and mean size at metamorphosis showed substantial annual variation.

MOUNTAIN DUSKY SALAMANDER TAXONOMY

S. G. Tilley and M. J. Mahoney [1996, Herpetological Monographs 10:1-42] investigated patterns of variation at 22 allozyme loci in 53 populations of salamanders currently re---ferred to *Desmognathus ochrophaeus* Cope. Analyses of genetic distance data revealed that a homogeneous and well-diffentiated form is distributed from New York to southeastern Kentucky, in and northwest of the Ridge and Valley Physiographic Province. To the south, two relatively well differentiated, genetically homogeneous forms replace each other parapatrically in the Blue Ridge Physiographic Province at Iron Mountain Gap on the Tennessee–North Carolina border and somewhere between Linville Falls and McKinney Gap on the Blue Ridge divide. Farther south, a loose collection of relatively well differentiated populations occupies the Blue Ridge Physiographic Province south of the Pigeon River. Patterns of isolation by distance are evident for interpopulational comparisons both within and among these forms, and genetic differentiation has been accompanied by various degrees of ethological reproductive isolation. The authors propose that the application of a single name to this complex of populations is no longer tenable, and name the four forms (from northeast to southwest): *ochrophaeus*, *orestes* sp. nov., *carolinensis*, and *ocoee*.

NEW *HYLA* SPECIES FROM EASTERN BRAZIL

R. P. Bastos and J. P. Pombal [1996, Amphibia–Reptilia 17(4):325-331] describe *Hyla haddadi*, a new species of small treefrog, related to *Hyla branneri* (which they consider to be a full species), *H. decipiens* and *H. oliveirai*. The new species is known from the south of Bahia State to the north of Espirito Santo State in eastern Brazil. The new species is characterized by small size, snout mucronate or rounded in dorsal view and nearly truncate in profile, canthus rostralis evident, and large head. In most specimens, the color patterns show a light triangular mark on the head and light lateral stripes.

Unofficial Minutes of the CHS Board Meeting, January 17, 1997

The meeting was called to order at 7:45 P.M. Board members Jenny Picciola and Mike Scott were absent.

Officers' Reports

The minutes of the December board meeting were read, corrected and accepted.

The Treasurer's Report was reviewed and accepted.

John Driscoll reported that current membership stands at 1310.

Corresponding Secretary Gary Kostka will update a Chicago Herpetological Society "blurb."

President Steve Spitzer announced that he has appointed Tonya Maris as Adoptions Coordinator for the coming year. The board expressed thanks to Bill Peterson in absentia for an excellent job at this position in 1996. Steve also announced that Claus Sutor will no longer be the voice on the CHS telephone information line, (773) 281-1800. Jan Spitzer will be doing the monthly message updates for the time being. Steve Spitzer agreed to write a letter to Mike Scott to determine if he is able to fill his elected board seat as Member-at-large.

Committee Reports

1997 Reptile-fest: A committee meeting will be held at Lori King-Nava's home on February 1, 1997. Lori distributed an update to the board. Admission is planned at $5 adults / $3 children.

Grants: No volunteer has been found to chair the Grants Committee. However, Dottie Humbert offered to collect and organize any applications so that the entire board could make the decision on grant awards. Mike Dloogatch moved to set the grant monies for 1997 at $2000. The motion was seconded by Jack Schoenfelder and passed unanimously. An announcement will appear in the February *Bulletin*.
Library: Jenny Picciola was not able to be present but reported to Steve Spitzer that she is working on creating a CHS home page on the World Wide Web.

Shows: Jenny Vollman stated that our next show would be at the Chicagoland Family Pet Show, March 21–23, at the Arlington International Racecourse.

Old Business

Sales: Jenny Vollman expects to have the computerized inventory up to date by the time of the January general meeting. Ron Humbert moved that he be authorized to investigate avenues for selling our entire merchandise inventory. The motion was seconded by Audrey Vanderlinden. A discussion followed and the motion was amended to investigate selling only the books but not other merchandise. The motion passed unanimously.

New Business

The Field Museum has informed us that the Staff parking lot is no longer going to be available for our members' use at the general meetings. Members will have to use the McFetridge Drive meters or the Soldier Field lot. Steve Spitzer will try to determine exactly when this goes into effect.

Jack Schoenfelder moved to pay out a one-time reimbursement of 1996 expenses to Jenny Vollman in the amount of $500. The motion was seconded by Ron Humbert. The motion carried with Jenny Vollman abstaining and all others in favor.

Ron Humbert discussed his intentions as Sergeant-at-arms with regard to protocol at general meetings (starting times, raffle procedures etc.).

Round Table

Jack Schoenfelder expressed thanks to Chris Lechowicz for a job well done at President last year.

Gary Kostka thanked Lori King-Nava for all her hard work on the upcoming Reptile-fest.

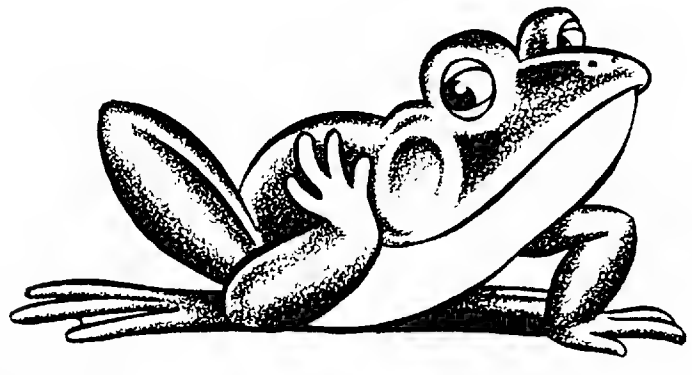
The meeting adjourned at 10:25 P.M.

Respectfully submitted by the Recording Secretary
Audrey Vanderlinden

Bull. Chicago Herp. Soc. 32(2):39-41, 1997

The Tympanum

Dear CHS Members,



For the past several months, I have been the subject of innumerable comments by Phil Averbuck on a number of subjects. It has been brought to my attention that Mr. Averbuck has again quoted me and bandied my name about in the January issue of this Society's publication. I suppose this incident is relatively benign compared with Mr. Averbuck's recent attempts to have me disciplined by the New England Herpetological Society based on his allegations that I owned illegal animals, or his threatening to sue me for something I posted on the Internet. Nevertheless, this has become rather a nuisance to me, as I am investing a certain amount of my valuable time in keeping up with what Phil has said about me to whom. Unfortunately, Mr. Averbuck is in the habit of making allegations about me without checking the accuracy of his statements, often based on old postings I have

made on the Internet, and then taken actions based on these allegations. Fortunately, to date, the people to whom he has reported me (who know Mr. Averbuck and me) have treated these matter with the appropriate level of amusement. However, for those of you who don't know the two of us, let me say the following:

1. I don't keep illegal animals. I don't have to. I keep animals which either don't require a permit, or I permit my animals;

2. My "priceless" permit for Gila Monsters cost me $10 to renew this year. Actually, since I have about 10 animals currently on my permit, it cost me about $1 a head;

3. The Division of Fish and Wildlife did not buy my opinion by granting my permit for helodermids. I am a lawyer; they are a state agency. They can't afford to buy my opinion. Nor was my alleged "spectacular change of heart" contemporaneous with the granting of my permit. I'll betcha Mr. Averbuck knows neither the date of my "spectacular change of heart" nor the date on which my permit was granted, as I asked him sometime back in the spring to stop calling me and E-mailing me because I did not support his positions and he was becoming, frankly, a nuisance.

4. I am not a criminal. I am fervently hoping to go to heaven, and therefore avoid committing crimes.

I can only ask that anyone reading anything that Mr. Averbuck writes about me will do so with a jaded eye, as I am running out of time to keep up with responding to everything I read about myself (a girl's gotta sleep every now and then). If anyone is interested in the entire history of this silliness, I will be happy to discuss it with them at either the snail mail or E-mail address below. I would rather not waste this publication's limited space in a tale that would require additional postage to be added.

I have no doubt that Mr. Averbuck will respond to this correspondence by reporting me to some new and different regulatory agency or again threatening me with legal action. Oh, well. **Leslie Morrison, P.O. Box 1082, Boston MA 02108, <rogie@world.std.com>**

The essay below was sent to us by Dean Ripa along with the article on Bothrops leucurus *that appears elsewhere in this issue. His opinions should not be construed to represent the position of the Chicago Herpetological Society or its Board of Directors. For what it's worth, however, the Editor of this* Bulletin *thinks that Mr. Ripa is right on the mark with his assessment of the underlying cause of habitat and wildlife destruction. On the other hand, the Editor also believes that Mr. Ripa's negative comments about the conservation movement are extreme and way overstated.*

Welcome to Bahia

Get off the plane in Rio de Janeiro or São Paulo, drive 30 or so miles, and you will see beautiful landscapes of forests just outside these cities. Looking at such lush, verdant surroundings this close to these great metropolises, you would expect the remote areas of Brazil to be even more unspoiled. This is deceptive. Drive north of Rio for about a hundred miles, away from the watchful eye of government, and a far different picture soon presents itself—like that of a nuclear wasteland. The state of Espirito Santo is so entirely deforested that it proved impossible to find any primary (and very little secondary) rainforest situations left in which to hunt for bushmasters—the whole state resembling something like our state of Kansas. Some small "token" parks about the size of pinheads on the map show you what used to be there (one park attendant told me I was the first visitor he'd had in six weeks!) So I drove further, to the state of Bahia, still hunting for some elusive rainforest, so I could hunt snakes. But the degree of deforestation in Bahia proved as extreme as any place in the world I had yet visited, comparable to the worst of Thailand and West Africa: A few scraggly bits of burning forest competing for distant mountaintops over vistas of cow pasture encroached upon by remnants of starving cacao. . . . And this is what has become of Brazil, the "Texas of the Tropics," which it surely is: a cow flop, a good backdrop for a John Wayne movie, with plenty of wide open spaces in which to pilot your horse under the burning equatorial sun. If people tell you that deforestation has slowed down since the Rio summit, then go and have another hamburger. The chainsaws were still going like wild when I left there, getting more beef-grazing areas ready for future cowboys.

So long as there is profit in it—*and there always will be*—this tendency will not, *cannot* change. As with that other failure, the Drug War, the "Conservation War" was already forfeited before it started. Police action to protect natural areas can't have any effect where law enforcement itself sells rights on who gets to distribute the product. And the selling of such rights is bread and butter to all police and government agencies everywhere. Supply follows demand, and demand till there is no more supply. . . . Similarly, laws to protect individual species of animals from poachers, collectors, animal dealers, etc., are worthless tokens to an idea that has failed and will continue to fail into the next century. If it is more profitable to "poach" than to police, then the police will poach. Ironically, it was your contributions (to Frankfurt Zoo, WWF and friends) that wiped out the rhino in Tanzania: they gave the park guards the guns, the ammo, the jeeps, the airplanes and the maps to "stop" what was then only a few hit-or-miss poachers: and then these poor "natives" they left in charge proceeded to show the world just what they could do with a little Yankee ingenuity behind them! Just ask a Tanzanian: it's common knowledge over there. But your Wildlife Protectors will tell you it was the Maasai. . . . The Maasai, who have no guns, no jeeps and no airplanes.

Cold War, Drug War, Poacher War, it's all the same queasy pizza—increasingly difficult to tell which side you're on; and in fact such roles are all interchangeable. As in the spy game, sooner or later everyone defects.

Only by reducing the world's human population (and its increasing consumption) can this down-spiral of destruction be altered. All the rest is just a conservation con-game invented by conservation scammers, who themselves are making money

off a dying planet! (Quoth Peter Beard: "CONservation, with the emphasis on the CON!") WWF TRAFFIC, CITES et al. — what have they accomplished so far? Is the situation not worse than when they started twenty some years ago? Obviously "yes": the improvements don't offset the damages. "Give us more money!" they whine. A few fingers in the dike, and a thousand new laws on the books can't change the flood that's coming, that indeed, is already here and all over the world simultaneously, launched by human needs of an unprecedented scale, protected by the vested interests that supply them. Will limiting the number of American box turtles that can be collected (from roadways, being rescued from passing cars, no doubt, where they were always collected in the first place— that mystical creature the "professional box turtle hunter" exists only on paper), will this measure, or even an outright ban on collecting them, do anything to stop the shopping malls, housing developments, golf courses, and hundreds of new highways being cut across natural areas every week in this country, that are being built on top of places where box turtles *used* to live? Ask the box turtle and you will get as intelligible an answer. No, that poor lowly reptile will go on getting squashed on our roads at a daily rate ten thousand times the amount of all the total number of box turtles exported from this country for the entire century. That law has achieved only one thing: a little more fear of government. . . . Now that I can't even pull off onto the road-shoulder to rescue a mere turtle from a passing car without threat of arrest or a big fine, I can at least sleep better knowing it was safely squashed *at home in America*! A few political contrivers in big cities can rest easier now too, with a sense of higher purpose; and the self-righteous animal-rights activist gets a new place to point his finger—anywhere but at themselves, the nuclear family and the supermarkets they propagate. When I read the newspapers, about how our "saviours" the wildlife agents have just nabbed another "animal-smuggler," I would be tempted to laugh were it not all so horrible to think that these cops-and-robbers authorities really believe they are doing some good. And the gullible public behind them. Together they form an unshakable wall *against wildlife*. By refusing to acknowledge *what's really the matter*, and with their own self-righteous policies obscuring any realistic, workable solution, these people, worse than all smugglers and poachers combined, are the ones doing the most harm. Rather like a doctor who cuts out *only part* of a cancer, then sends the patient home with a band-aid the better to keep it alive so it can spread. They are the "quacks" and they will keep us all hanging on to their band-aid method until it is too late.

Which, in fact, it is. Man has reached the unenviable position in his history where perhaps only a worldwide plague destroying his numbers en masse can save his species (and all others) from himself. But first a little famine to make it palatable. . . .

Enter the 21st century. Welcome to Bahia.
Dean Ripa, 4608 Cedar Avenue, Wilmington NC 28405.

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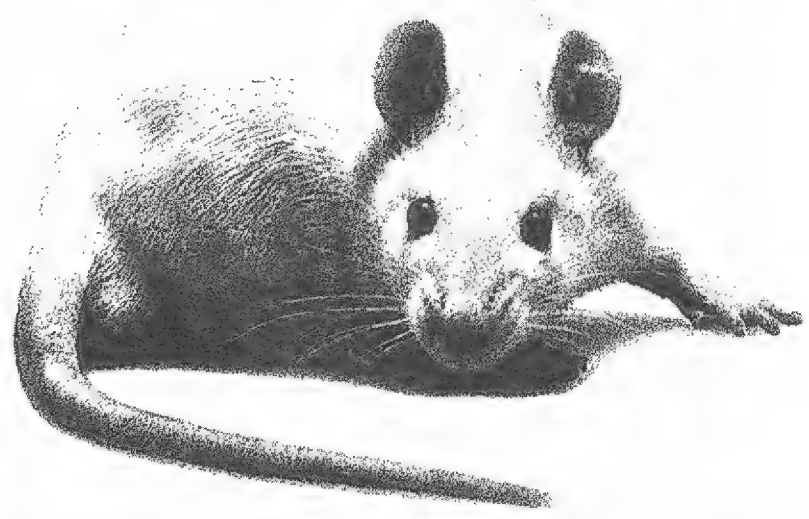

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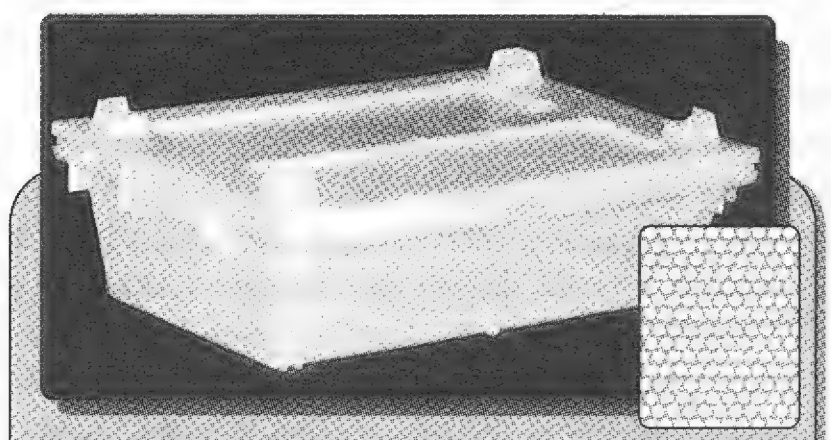

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For sale: from Bayou Rodents, excellent quality feeder mice and rats. Every size available. Pinks starting at $20/100. Orders are shipped by overnight service Monday thru Thursday. We accept Visa, MasterCard and Discover. For more info, contact Rhonda or Peggy, (800) 722-6102.

For sale: **high quality frozen feeders**. Over a decade of production and supply. Seven sizes of mice availabe: small newborn pinks up to jumbo adults. Prices start at $25 per 100. Feeders are separate in the resealable bag, not frozen together. Low shipping rates. Free price list. Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358 evenings and weekends.

For sale: In stock, Flex-watt and Ultra-therm heating products. **Frozen rodents** always available. Mice: pinks–crawlers, 3/$1; weanlings, 40¢; subadult, 50¢; adults, 65¢; large adults, 75¢. Rats: small, 85¢–$1; medium, $1.25–2.00; large, $2.25–2.75; jumbo, 3/$10. Call on quantity discounts [note: discount on orders picked up at CHS meetings]. Live rodents available at higher prices. **Available now**: newsletter/catalog—many unique/hard-to-find herp husbandry items. Send business-size SASE for catalog, or call. Scott J. Michaels, D.V.M, Serpent City, P.O. Box 657, Island Lake IL 60042, (815) 363-0290.

For Sale: **Reptile D-lights.** Our 8% is the first and only fluorescent light bulb that duplicates the UV-B output of the sun while having an excellent color rendition (CRI 91). Let your reptile make *exactly* the right amount of vitamin D. Stop under- or overdosing with all those powders. A must-have for iguanas, uromastyx, bearded dragons and all diurnal basking lizards. Get yours now! Available in 18", 24", 36", 48". $34.95 each plus shipping. In California please add 7.75% sales tax. Dealer inquiries invited. Scott Solar (909) 627-3274; 9 – 9 Pacific Time or; Reptek@aol.com anytime. For Animal Use Only.

For sale: handcrafted miniature cartoon-like sculptures of any herp. Refrigerator magnets, desk ornaments, paperweights, earrings, pins etc. You name it—I'll make it. Prices vary. Dave Golde, (847) 679-1530.

For sale: herp books. Klauber—*Rattlesnakes*, 2 vols., 1st edition (H), $275; Maki—*Monograph of the Snakes of Japan*, 3 vols., $450; Tennant—*The Snakes of Texas*, large ed., w/dj, $150; Kauffeld—*Snakes and Snake Hunting*, original editions, w/dj, $28. Other titles available. I am always interested in acquiring new titles. Make check or money order to: Keith Neitman, 11415 Longbrook, Houston TX 77099.

For sale: *TURTLES*, the critically acclaimed book by Anita Baskin-Salzberg and Allen Salzberg. Only $20, postage and shipping included. This is the book "Herp Review" as well as "Chelonian Conservation and Biology" called one of the most accurate and beautiful on turtles for children to come along for a long time. If not for you, or your child, consider donating *Turtles* to your local school or children's library. It's tax deductible. Just send your check to A. Salzberg, 67-87 Booth Street -5B, Forest Hills, NY 11375. We'll autograph it upon request.

For sale: **Reptile cage plans**. Finally, an easy and inexpensive way to build your own cages. Choose from four different plan sizes. Small (24 × 24 × 24), Medium (48 × 24 × 24), Large (48 × 24 × 36), or Extra-large (72 × 24 × 36). Based on width × depth × height (in inches). Each set of plans comes with complete instructions, parts list, detailed assembly instructions, and a figure of a completed cage. Plans are $8 each, or all four plans for $24. Also available, electric line thermostats. Easy to use and install. Takes minutes and installs directly into the electric line that feeds your heat lamp. Only $30. Please mail orders to Tait Kjellberg, P.O. Box 72087, Davis CA 95617.

For sale: moving, must sell. One pair of 2-year-old rhino iguanas and one pair of 2-year-old Cuban rock iguanas. All flawless, c.b., for great price. Also custom-built chameleon cage, 2' × 4' × 5', must see to appreciate. Zoo-worthy. Mike, (708) 895-4336 evenings.

For sale: adult male red–orange cross bearded dragon, $350; one male and one female rhino iguanas, male 2½' and baby-tame, female smaller and less tame, $900/pair; male ball python, $25; New Guinea frilled dragons, juveniles on up, call for prices. *All* animals c.b. I am currently working with 7.10 emerald tree boas, 4.4 adult New Guinea frilled dragons, 6.14 adult Australian frilled dragons from two different areas. Must see photos of Australians. These animals have much larger frills, a lot more color and are more aggressive than New Guinea animals. Ed Marino, (410) 557-9197. [MD]

For sale: frilled dragons, $500; Sandfire × red bearded dragons, $75 & up; lemon-yellow bearded dragons, $40 & up; coastal carpet pythons, $100; Amazon tree boas (garden phase), $65; trinket rats, $65; Okeetee corns, $25; Everglades rats, $20; Cal kings, $25; Florida kings, $20. Call Jim Kavney, Hiss 'n' Things, Inc., (305) 664-2881, E-mail <Hissn1@aol.com>. [FL]

For sale: Beautiful, captive-born animals. Bearded dragons—reds, $75–125, true yellows, $125, reds/sandfires, $125, **vitikins**, $75; adult male bearded dragons—reds, $200, normals, $125; bluetongue skink babies, $150; frilled lizard babies, $400; *sulcata* tortoise babies, $100; one male and two female *sulcata* tortoises, adult breeding trio, one female is gravid, $2000/group. Minimum for shipping, $100. No minimum for pick-up. Ask about quantity discounts. **Midwest Reptile Farm**, Elk Grove Village IL, (847) 593-2831.

For sale: beautiful, feeding snakes. Wholesale quantities to dealers, individual purchases welcome. Send SASE for **free** price list. Robert Applegate, P.O. Box 338, Campo CA 91906, (619) 478-5123. Also, free phone consultation on snake husbandry problems as a service to the herp community.

For sale: c.b. August '96 corn snakes, hetero for anerythrism, colorful orange background, lots of black border, $15–20. Prospective offspring for '97: amelanistic corn snakes, anerythristic and hetero for anerythristic corn snakes, and eastern "chain" kingsnakes. Pickup or delivery to CHS meetings only. Mike, (630) 717-9955.

For sale: one male and two female c.b. '95 Sinaloan milksnakes, $55 each, $150/trio. (708) 361-5835.

For sale: by June 1997, the following quality, reasonably priced, captive-born colubrids. Northern pine snakes—north Jersey, $140/pait, south Jersey, $125/pair, Virginia/Alabama, $90/pair. Bull snakes—yellow-headed, $50/pair, Canadian, $60/pair. Corn snakes, high quality Delaware stock, large, pretty, $40/pair. Future projects include western hognoses, black pines, black bulls and red bulls. Pairs only. Supplies limited, order now. Bart Bruno, (203) 773-9257 evenings and weekends. [CT]

Advertisements (cont'd)

For sale: **Northern Mexican pine snakes**, *Pituophis deppei jani*, as seen in the January 1997 *Reptiles* magazine, captive-born babies from a large, unrelated, locality-matched breeding group. The majority of *P. d. jani* in captivity originate from my stock. Care sheet included in every order. Alan Kardon, (210) 623-4311 after 6:00 P.M. Central Time.

For sale: c.b. '96 Honduran milksnakes, $90. Brian, (773) 736-4649.

For sale: expected '97 offspring. New Jersey coastal plains milksnake, sharp rust/orange, $50–250; anerythristic Hondurans, $1000, possible hets, $250; albino Florida garters, creamy yellow/white, nice, $300, hets, $150; albino plains garters (two bloodlines); albino Cal kings, lavender/white & gorgeous yellow with purple splotches, $300, hets, $150. Scott, (919) 934-0110. [NC]

For sale: **captive bred and raised adult breeders**. **Boids**: five male and ten female true red-tailed boas (Brazil, Guyana, Peru, Surinam); three male and three female Argentine boas; four male and four female Dumeril's boas; two male and two female Hogg Island boas; one male and one female Bismarck ringed pythons. **Colubrids**: two male and three female Durango mt. kingsnakes; two male and three female San Luis Potosí kingsnakes; one male and one female California mt. kingsnakes; one male and one female Arizona mt. kingsnakes; one male and one female black & white California kingsnakes; one male and two female Key Largo rat snakes (*deckerti*); two male and six female albino corn snakes; one male and five female normal corn snakes; one albino male San Diego gopher snake; two albino female Sonoran gopher snakes. **Supplies and accessories**: Neodesha cages (new and used); books (large selection); Flexwatt and Cox heat tape; Pearlco ceramic heating elements and reflectors; "Instant Sun" UVB fluor. bulbs; rock pools & caves; skulls (tank ornaments); current and back issues of *Reptiles*, *Reptile and Amphibian* and *Vivarium* magazines. Too much more to list! All animals listed are from my personal collection, and have never been offered for sale previously. Become a breeder instantly! Save five years on the cost of rodents and maintenance. Tremendous investment opportunity for the right person. Serious inquiries only. Dan, New York Reptilia, (718) 461-1371.

For sale: one male and one female diamond pythons, c.b. '96, very pretty, $4400/pair; one male and two female Crawl Cay boas, c.b. '94, rare dwarf boa constrictors, 4–5' as adults, these are 3½', pretty, $1500/group; one male and two female Hogg Island boas, c.b. '96, Bob Sears stock, very light, $250 each; one male green tree python, turning green, eats rats or mice, $525; one male and one female anerythristic Hondurans, c.b. '96, lavender/pink, $1500/pair; one male and one female aberrant Colombian boas, c.b. '94, female has twin stripes, male has fused saddle pattern, unusual and pretty, photos available, $400/pair; three male and three female California kingsnakes, c.b. '96, aberrant/high yellows, all are pretty, 18–24", $45–65 each; three male and three female Amazon tree boas, all are captive born, one pair breeders, $375/pair, one pair subadults, $375/pair, one pair yellow yearlings, $350/pair. Call or fax (619) 265-7557. [San Diego]

For sale: Send SASE to CRC, P.O. Box 0731, Las Vegas NV 89125-0731 for brochures and list of species available. Limited bookings available for guided tours of herpetological collection sites in Nevada. Call/fax (702) 471-0240. E-mail <fpglwmau@anv.net>.

For sale or trade: 70 hatchling African spur-thighed tortoises (*sulcata*), $75 each. Will trade for the following: male and female Libyan Greek tortoises that were imported last year; also Chaco, marginated, Herrmann's, stars, radiateds, leopards, Galapagos. I have paperwork. Also will trade for jeweled lacertas (*lepidus*). Bob, (602) 919-2872 mobile, or (520) 868-4659 home. [Florence AZ]

Free to good home: 1-year-old iguana. Cage and furnishings available if needed. Pam, (847) 295-2625.

Pet-sitting service: Complete in-home pet and plant care, specializing in reptiles and other unique pets. Dogs and cats welcome with open arms, midday dog walking. Experienced and dependable service by devoted animal lovers, serving Chicago and suburbs, reasonable prices, fully insured and bonded. Ask about our habitat consultation and custom-made cages. Exotics & More, (312) 728-5457 or page us at (708) 750-3688.

Repto-rama: Live educational presentation of local herps and herps of the eastern U.S. for parties, scout groups, nature centers etc. Dave, (847) 679-1530.

Software: **TRACS**™ record keeping and breeding software for IBM and compatibles. TRACS™ Professional, a full system, $129; TRACS™ *Lite*, for the hobbyist, just $39.95. Add $5 s&h, $10 outside U.S. Send for a working demo for $10 (cost may be applied toward purchase). Or download demo free via Internet at <http://www.herp.com/tracs/>. Send check or money order to Leapin' Lizards, 23852 Pacific Coast Highway, #375, Malibu CA 90265.

Tours: Adventure tours to Madagascar! Join **Bill Love** seeing and photographing fauna and flora, heavily herp-biased, across the world's least known mini-continent. Much more fun than shoveling snow November–February. Contact him at: BLUE CHAMELEON VENTURES, P.O. Box 643, Alva FL 33920. TEL: (941) 728-2390, FAX: (941) 728-3276, E-MAIL: <blove@cyberstreet.com>.

Tours: **Road-riding in Costa Rica!** Treat yourself to the trip of a lifetime! Learn about tropical herps, find them, photograph them, see where they live. **Greentracks, Inc.**, offers the best herpetological tours led by internationally acclaimed herpetologists and herpetoculturists. See the Amazon, visit cloud forests, experience the world's greatest rainforest, super sunsets and good company. Call (800) 9-MONKEY.

Video: *Rattlesnake Hunting*, a 60-minute video by a 30-year veteran collector. Don't miss this one! It's as close to being in the field as you can get. (Not a slick commercial production.) Send check or money order for $19.95 plus $3 postage & handling to: D. Wheeler, 2705 Sunset Trail, Riverwoods IL 60015. Allow 4–6 weeks for delivery.

Wanted: Responsible person needed to visit my Evanston home for pet and plant care when I travel. Small lizards, frogs and lots of plants—$10/hour. (847) 864-5513.

Wanted: adult male amelanistic corn snake. Mike, (630) 717-9955.

Wanted: aberrant, unusual garter snakes. Scott, (919) 934-0110. [NC]

Wanted: to buy—one female Mexican hognose, preferably c.b. '95 but '94 or '96 okay. Also want corn snakes of the phase pictured in Plate 604 of the Audubon Society field guide and any species of *Natrix* (e.g., *Natrix natrix*; *Natrix helvetica* etc.). John Butler, 13907 Crossing Way West, Edmond OK 73013, (405) 348-6997 M–F 10 A.M.–6 P.M. CT, or (405) 478-4027 M–Sun 'til 11 P.M. CT.

Wanted: turtles. Box, painted, sliders etc. If you're moving, the kids are tired of them, or any reason, Ill take your unwanted turtles. I have lots of large empty tanks and 25 years of experience. If you live within 100 miles of Chicago, please call me and I'll give your pets a great home. Harry, (773) 728-7490.

Wanted: big-headed turtles; mata mata turtles; Mexican giant mud turtles (*Staurotypus triporcatus*); exceptionally large common snappers (45 lbs. & up); large alligator snappers (over 90 lbs.); spectacled caiman from Trinidad, Tobago and Surinam; dwarf caiman; smooth-fronted caiman; albino turtles (except red-eared sliders). Walt Loose, (610) 926-6028, 9:00 A.M. – 1:00 P.M. or after 11:30 P.M. Eastern Time.

Wanted: Looking for investors interested in opening a reptile museum/pet store/shelter dedicated to educating the general public, performing educational programs and finding good homes for unwanted animals. Please contact Dave Golde with any information on potential investors or government funding, (847) 679-1530.

Wanted: Styrofoam boxes, any size or shape so long as they're not flimsy, preferably with cardboard liners, willing to pay from $2 to $5. Bring to CHS meetings. Scott J. Michaels, D.V.M, Serpent City, (815) 363-0290.

Advertisements (cont'd)

Line ads in this publication are run free for CHS members — $2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to: Michael Dloogatch, 6048 N. Lawndale Avenue, Chicago IL 60659, (773) 588-0728 evening telephone, (312) 782-2868 fax, E-mail <MADadder0@aol.com>.

News and Announcements

MOVING??

Please let us know in plenty of time of any change in your mailing address. The *Bulletin of the Chicago Herpetological Society* is sent to our U.S. members by bulk-rate third class mail. This means that the U.S. Post Office will not forward your *Bulletin* with the rest of your mail. This is so even if you make a special request that your magazines be forwarded (such a request only applies to second class mail).

NEW YORK TURTLE & TORTOISE SOCIETY POSTER CONTEST

The New York Turtle & Tortoise Society (NYTTS) has announced its 1997 Annual Turtle Poster Contest. This contest is intended to help educate both children and adults about the plight of threatened and endangered turtles. The poster should depict threats facing turtles in general, or may focus on one particular species. Some examples might include, but are not limited to, over hunting for food and pets, pollution, road kills, loss of habitat and boat hits. **No Ninja Turtles allowed**. Posters should be submitted on heavy weight poster board and can measure either 12 × 18" or 18 × 24". Entries will be grouped according to age and grade level. Mediums suggested are paint, magic marker, inks or collage. Name, address, phone number, age, grade and name of school, if applicable, should be clearly printed on the back of the poster. Entries will be judged by a panel of conservationists, artists and teachers based on content, originality and artistic merit. Prizes will include official NYTTS T-shirts, books, and a one-year membership to the NYTTS. All entries must be postmarked by April 30, 1997. Mail entries to Poster Contest, New York Turtle & Tortoise Society, c/o Lorri Cramer, 750 Columbus Avenue, New York NY 10025. All posters become the property of the NYTTS and cannot be returned. If you have any questions on subject matter or rules, please contact Ms. Lorri Cramer at (212) 459-4803.

MID-ATLANTIC REPTILE SHOW BENEFITS RAINFOREST

The 4th annual Mid-Atlantic Reptile Show was held last September near Baltimore, Maryland. The show was a not-for-profit venture, allowing sales of captive-bred animals only, with net proceeds going toward the protection of rainforest habitat. The proceeds purchased 571 acres of rainforest in Costa Rica's Talamanca/Caribbean Biological Corridor and 200 acres in the Guanacaste Conservation Area. This brings the total rainforest purchased over the four years of this event to 1,616 acres. The show will be held again this year on September 13-14. For information contact Tim Hoen, Show Coordinator, P.O. Box 201, Jarrettsville MD 21084, (410) 557-6879, or check the Web <http://www.pythons.com/mars.html>.

1997 NATIONAL REPTILE BREEDERS' EXPO

The 1997 National Reptile Breeders' Expo, the world's largest reptile and amphibian show, will be held at the Radisson Twin Towers Hotel in Orlando, Florida, over the weekend of August 16–17. A special benefit for the International Gecko Society will take place on Friday night, August 15. The night will feature talks on a variety of gecko topics and all proceeds will benefit the IGS. There will also be a variety of lectures Saturday evening, August 16. For more information please contact Wayne Hill at (941) 294-2235 or write The National Breeders' Expo, P.O. Box 3277, Winter Haven FL 33885.

UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, February 26, at the Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, in Chicago. **Ray Pawley**, Curator of Amphibians and Reptiles at Brookfield Zoo, will be our guest speaker. Ray's program will be an "Update on Rearing Baby Galapagos Tortoises at Brookfield Zoo."

We have recently found out that we must reschedule our April 30 meeting because of a conflict with the Field Museum Members' Night. The new meeting date will probably be one week earlier, on Wednesday, April 23, but this has not yet been confirmed by the museum staff. More definite announcements will appear in the March and April *Bulletins*.

We are required to use the entrance on the west side of the museum. We have permission to use the staff parking lot to the west of the museum. Entrance to this lot is from McFetridge Drive, the wide street just to the south, between the museum and Soldier Field. **Due to the recent rerouting of Lake Shore Drive, there have been some changes in traffic flow – follow the signs to the "Museum Campus." From southbound Lake Shore Drive this means a right turn onto Roosevelt Road followed by a left on Columbus Drive.** The #146 CTA bus goes directly to the museum. Unfortunately, it does not operate past 9:00 P.M. However, after the program anyone needing a ride to a CTA stop will have no trouble finding one—just ask any board member.

Turtle Club

The Chicago Turtle Club will meet Sunday, February 23, 1:00–3:30 P.M., at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago.

Amphibian Club

The Amphibian Club will meet Friday, February 28, 7:00–9:00 P.M., at the Skokie Public Library, 5215 Oakton Street. The topic of discussion will be "White's Treefrogs in Captivity." The speaker will be treefrog guru Matt Klueppel. If you are interested in attending the meeting, please call Dave Golde at (847) 679-1530.

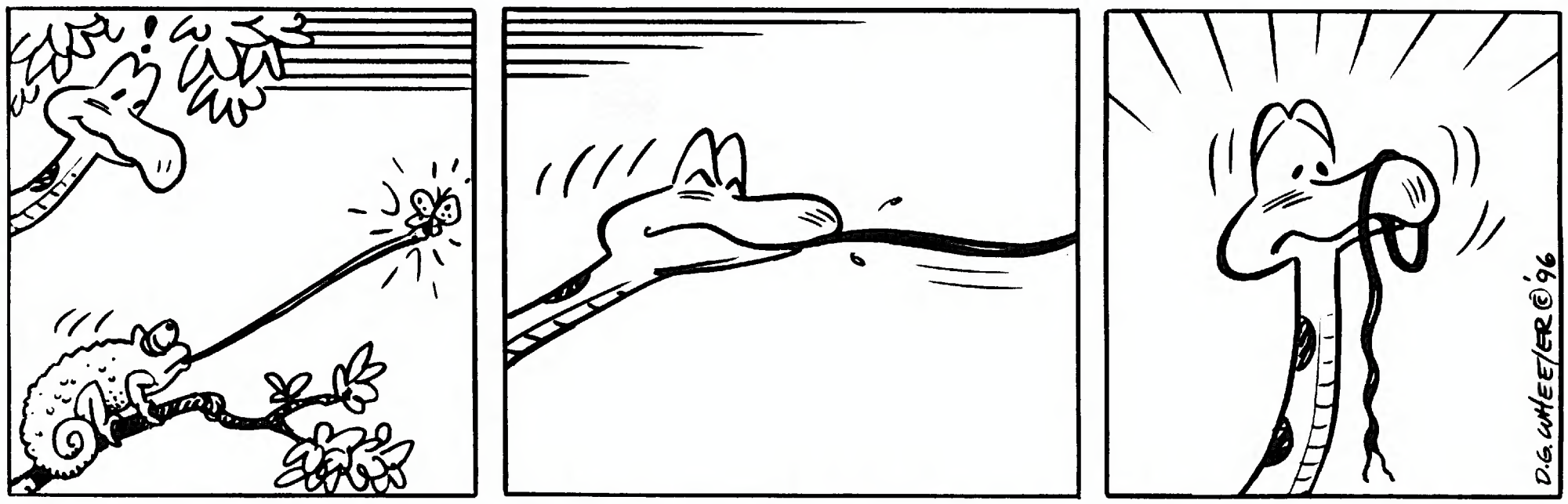
CAN YOU HELP?

The Division of Amphibians and Reptiles at the Field Museum seeks volunteers to assist in collection management projects. Volunteers at the Field Museum play a vital role in the care and maintenance of the collections. Their contributions in processing specimens and library work greatly increases the museum's ability to serve the scientific community in research projects around the world. Assignments involve a variety of tasks such as specimen processing, library research and computer database verification.

The volunteer experience in the Division of Amphibians and Reptiles provides the opportunity to meet diverse people, make new friends, explore new avenues of learning and above all, to have fun while helping the museum in its mission to disseminate knowledge about the natural world.

If you are interested in learning more about the museum's volunteer program, please contact Mr. Mark Alvey, Volunteer Coordinator, Department of Education, Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, Chicago IL 60605-2496, (312) 922-9410, extension 360.

THE ADVENTURES OF SPOT



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